



Final Program



2024 IEEE 99th Vehicular Technology Conference

24 – 27 June 2024

Singapore

Welcome from the General Chair

On behalf of the organizing committee, it is our great honour and pleasure to extend a warm welcome to you for your participation in VTC2024-Spring, the flagship conference of IEEE Vehicular Technology Society.

VTC has consistently upheld its standing and reputation as a distinguished platform for scholarly contributions, and we are delighted to have received a substantial number of high-quality submissions, forming a basis for an excellent technical program. The technical program also features six keynote presentations and panel sessions by leading experts from academia and industry, providing the research community a stimulating opportunity to grasp the recent advancements in the field, with the most visible topics in this spring being 6G and related key technologies.

It will undoubtedly be an inspiring experience to meet you in Singapore, a tropical island nation and city-state, a global hub connecting the East and the West. We hope you'll find time outside the conference schedule to enjoy the diverse cultural heritage, wide range of food choices, stunning landmarks, cosmopolitan atmosphere with exceptional dining, shopping, and entertainment options.

We wish to extend our heartfelt appreciation to the invaluable team whose efforts have made the organization of this edition possible, including all the members of the organizing committee, and

particularly, the Technical Program Chairs, Chau Yuen, Co-Chairs Yusheng Ji, Marco Di Renzo, and Derrick Wing Kwan Ng, Publication Co-chairs James Irvine and Yiyang Pei, Keynotes & Panels Co-chairs Hai Lin and Lajos Hanzo, Tutorial Co-chairs Koichi Adachi and Yonghong Zeng, Workshop Co-chairs Li-Chun Wang and Boon Hee Soong, Industry Program Co-chairs Edward Ay and Amnart Boonkajay, Publicity Chair Ernest Kurniawan, Awards Chair Teng Joon Lim, and Local Arrangement Chair Christopher Lee. We would also like to thank all our distinguished speakers and panellists, who have agreed to address the conference attendees. We wish to also convey our deep appreciation to the extensive cohort of TPC members and reviewers who generously devote their time to uphold the rigor of our review process, as well as to our fellow members of the organizing committee.

Finally, none of what we could do would have been possible without the professional support from Vehicular Technology Society. We are deeply appreciative of the invaluable contributions from conference administrators Rodney C. Keele and Cerry Leffler, and Financial Chair J. R. Cruz.

Welcome to Singapore and VTC, the flagship conference of the Vehicular Technology Society.

Sumei Sun and Chen Hui Ong
General Co-chairs, IEEE VTC2024-Spring

Welcome from the VTS President

On behalf of the IEEE Vehicular Technology Society (VTS), it is my great pleasure to welcome you to the 99th IEEE Vehicular Technology Conference, VTC 2024-Spring, in vibrant and beautiful Singapore!

This semi-annual IEEE VTS flagship conference offers opportunities for you to report your latest R&D achievements, to get informed of various technological advances, to exchange ideas with technical leaders, and to network with your peers in the field of mobile communications and networks, connected vehicles, electric vehicles, autonomous driving, and so on. Organizing this world-class conference requires a strong team of volunteers who have devoted both their time and their technical expertise. I would like to take this opportunity to thank and congratulate the whole conference organization committee led by the VTS Vice President for Conferences, J.R. Cruz, the Conference General Chair Sumei Sun and Co-Chair Chen Hui Ong, Technical Program Committee Chair Chau Yuen and Co-Chairs Yusheng Ji, Marco Di Renzo, and Derrick Wing Kwan Ng. The conference organization committee has been working diligently in planning and running this event with the excellent technical program, tutorials, workshops, and industry

panels. I would also like to recognize the generous support of the conference sponsors which will significantly enhance the experience of all participants in this conference.

IEEE VTS has been successful in engaging the global technical community and in contributing to advances in vehicular technology in the areas of mobile radio, motor vehicles, and land transportation. At this conference, we will organize various activities to engage VTS members or all conference attendees, including events for young professionals and graduate students. We will showcase the VTS technical committees and standards committees. You will get to know their technical focuses and achievements, ongoing work, and planned activities in the areas of future communication systems, of autonomous, connected, and electric vehicles, and of intelligent ground transport infrastructures. I encourage you to join the committees of your interest. The VTS strives to listen to our members for their needs, be creative and work hard on numerous existing programs and new initiatives towards a stronger Society. If you are not a VTS member or student member yet, it is a good idea to consider joining VTS today to benefit from all the

services and resources that VTS provides and to contribute to the community!

Finally, I am pleased to let you know that VTS will celebrate its 75-year anniversary and the 100th edition of this conference at the next VTC to be held in Washington, DC, USA, in October 2024. Both VTS Board of Governors and the organization committee of VTC 2024-Fall have been working on many celebration activities, in addition to the conference technical program.

I would like to thank everyone for attending this conference and I wish all of you a great time at this VTC and in Singapore. I hope to see you again in VTC 2024-Fall, and I know you will enjoy the special occasion for celebrating both the VTS 75-year anniversary and the 100th edition of VTC.

Weihua Zhuang, *President*
IEEE Vehicular Technology Society

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Sanjeev Sharma	Ye Zhan Sun	Vipin Venugopal	Jun Wu	Junjie Ye	Tao Zhang	Xusheng Zhu
Chandan Kumar	Yukun Sun	Jordi Vilà-Valls	Po-Chen Wu	Xinrong Ye	Ting Zhang	Lin Zhuang
Sheemar	Zeyu Sun	Evangelos Vlachos	Qingqing Wu	Tomohiro Yendo	Wei Zhang	Progress Zivuku
Li-Hsiang Shen	Dajiang Suo	Nguyen-Son Vo	Tianhao Wu	Changyan Yi	Weihan Zhang	Jianpeng Zou
Shuo Sheng	Satoshi Suyama	Oliviero Vouch	Xianda Wu	Wenqiang Yi	Wenyi Zhang	Yixuan Zou
Sikai Sheng	Takumi Takahashi	Thai-Hoc Vu	Ye Zeng Wu	Zhang Yi	Xiang Zhang	Yiping Zuo
Yucheng Sheng	Pietro Talli	Wajjha Khan	Yuan Wu	Cheng Yin	Xiaoqi Zhang	Stanislav Zvanovec
Zhichao Sheng	Weiqiang Tan	Michael Walter	Henk Wymeersch	Ridho Hendra Yoga	Xiaoxu Zhang	
Hongyin Shi	Aimin Tang	Bohao Wang	Le Xia	Perdana	Xueyao Zhang	
Junling Shi	Jianhang Tang	Bowen Wang	Minghua Xia	Byungha You	Yao Zhang	
Rui Shi	Wankai Tang	Chen Wang	Wenchao Xia	Minglei You	Yao Zhang	
Yao Shi	Zhifeng Tang	Dezhi Wang	Zhuoran Xiao	Néji Youssef	Yi Zhang	
Shin-Lin Shieh	Zhiqing Tang	Hong Wang	Boxuan Xie	Heejung Yu	Yijia Zhang	

Tutorials

A range of tutorials will be held on Monday 24 June 2024 given by experts from industry and academia.

Monday, 24 June 2024 9:00-12:30 Heliconia 3405

T1: Advancing Terrestrial Networks and Non-Terrestrial Networks through Collaborative Intelligence at the Edge

Zhi Liu, The University of Electro-Communications; Liang Zhao, Shenyang Aerospace University; Daniele Tarchi, University of Bologna; Wei Zhao, Anhui University of Technology

In modern society, terrestrial networks and non-terrestrial networks have become increasingly important to offer ubiquitous connectivity and computing resource. The research challenges arising from their mobility, the demand for network and computing resources have garnered significant attention from both the academic and industrial sectors.

This is a tutorial focused on leveraging edge computing and the capabilities of Terrestrial Networks and Non-Terrestrial Networks to enhance the communication and computation

capability of entities for transportation and aerospace. The tutorial delves into how this collaborative approach can significantly benefit smart vehicles, UAVs, and satellites. Key topics covered in the tutorial may include edge computing architectures, communication protocols, and machine learning algorithms tailored for applications for both terrestrial and non-terrestrial scenarios. A specific attention will be given to novel Distributed Learning paradigms that allows to better cope with the distributed scenario individuated by the ground, aerial, and satellite components, paving the way toward Network-for-AI paradigms.

Participants are likely to gain insights into optimizing resource allocation, enhancing situational awareness, and improving overall performance through the implementation of collaborative intelligence at the edge. The event explores the application of collaborative intelligence, which involves distributed processing and decision-making among devices at the edge of a network. The tutorial will consider both theoretical

and practical aspects, by analyzing the fundamental aspects of smart mobility, Non-Terrestrial Networks, and Machine Learning, and analyzing the most interesting application from the literature background.

Zhi Liu (S'11-M'14-SM'19) received his Ph.D. from the National Institute of Informatics, Japan. He is currently an associate professor with tenure at The University of Electro-Communications, Japan. He has published over 60 IEEE/ACM journal papers and received six best paper awards. He received the IEEE ComSoc MMTC Outstanding Young Researcher Award. He is serving or has served as an Editor for IEEE Transactions on Multimedia, IEEE Systems Journal, IEEE Open Journal of the Computer Society, and Springer Wireless Networks. He is the co-chair of the IEEE Comsoc Technical Committee on Big Data (TCBD) Special Interest Group (SIG) on big data for edge computing and smart society.

Liang Zhao is a Professor at Shenyang Aerospace University, China. He received his Ph.D. degree from the School of Computing at Edinburgh Napier University in 2011. Before joining Shenyang Aerospace University, he worked as associate senior researcher in Hitachi (China) Research and Development Corporation from 2012 to 2014. He is also a JSPS invitational Fellow (2023) and a visiting professor at the University of Electro-Communications, Japan. He was listed as Top 2% of scientists in the world by Stanford University (2022 and 2023). His research interests include ITS, VANET, WMN and SDN. He has published more than 150 articles. He served as the Chair of several international conferences and workshops, including 2022 IEEE BigDataSE (Steering Co-Chair), 2021 IEEE TrustCom (Program Co-Chair), 2019 IEEE IUCC (Program Co-Chair), and 2018-2022 NGDN (founder). He is Associate Editor of Frontiers in Communications and Networking and Journal of Circuits Systems and Computers. He is/has been a guest editor of IEEE Transactions on Network Science and Engineering, Springer Journal of Computing, etc. He was the recipient of the Best/Outstanding Paper Awards at 2013 ACM MoMM, 2015 IEEE IUCC, 2020 IEEE ISPA, 2022 IEEE EUC and 2023 IEEE SustainCom.

Daniele Tarchi has been an Associate Professor at the University of Bologna since 2019, where he works on terrestrial and satellite wireless communications. His research interests are mainly on Edge and Fog Computing systems, distributed intelligence and computing techniques, optimization techniques, and heterogeneous networks, with particular attention to Smart City, Integrated Terrestrial and Non-Terrestrial Networks, and Intelligent Transportation Systems. He has been involved in several national and international research projects and collaborates with several European research institutes. He has published more than 145 papers, among which 63 on international journals. He is an Editorial Board member for IEEE Transactions on Vehicular Technology, IET Communications, and IEEE Open Journal of the Communications Society. He has been symposium co-chair for IEEE WCNC 2011, IEEE Globecom 2014, IEEE Globecom 2018, and IEEE ICC 2020, and workshop co-chair at IEEE ICC 2015. He has been an IEEE Senior Member since 2012.

Wei Zhao received his Ph.D from Tohoku University (Japan) in 2015. He has been an Associate Professor at Anhui University of Technology since 2015. He was also a JSPS invitational Fellow (2023) at the University of Electro-Communications, Japan and a JSPS Research Fellow (2016-2018) at Osaka University, Japan. He mainly works on wireless communications and networking. His research interests are mainly on Edge Computing, Deep Reinforcement Learning and its applications in IoV. He has published more than 30 papers, including IEEE Transactions on Mobile Computing, IEEE Network, and IEEE Transactions on Vehicle Technology. He has received best paper rewards from IEEE Globecom 2014 and IEEE WASA 2014.

Monday, 24 June 2024 9:00-12:30 Heliconia 3501B
T3: Deep Learning for Network Optimization and Resource Allocation in 6G and Beyond

Hina Tabassum, York University; Aryan Kaushik, University of Sussex, Carlo Fischione, KTH, Royal Institute of Technology

The next generation of wireless networks is anticipated to be more complex and heterogeneous due to higher transmission frequencies, massive internet-of-things (IoT) devices in air-space-ground networks, and ultra-dense access points. Subsequently, the wireless channel coherence time is reducing which necessitates faster and proactive resource management. Machine learning (ML), specifically deep learning, has shown promises to overcome those challenges by training neural networks (NNs) in an offline manner. Once trained, the time

complexity of obtaining network resource allocation variables from the NNs become significantly lower than the traditional optimization-based approaches. In the sequel, this tutorial will first provide an overview of state-of-the-art machine learning solutions that can reduce the time complexity of resource allocation in future wireless networks. As well, the aspects related to both “ML-assisted wireless solutions” and “Wireless-enabled ML services” will be covered. We will elaborate on the fundamental concepts, challenges, and applications related of supervised, unsupervised, and reinforcement learning for 6G network resource allocation. Next, the tutorial will delve into the deep unsupervised learning methods for network resource allocation problems with non-linear and non-convex constraints. The use of implicit layers and differentiable projection methods will be discussed. The tutorial will then focus on case-studies demonstrating the applications of reinforcement learning in vehicular networks, IoT, and non-terrestrial networks (NTNs). Finally, the tutorial will cover the significance of the concepts related to centralized and distributed learning as well as ‘over-the-air’ federated Learning in 6G and beyond. The tutorial will conclude by pointing out the existing research gaps in the successful roll-out of ML-enabled resource allocation and highlight potential research directions.

Prof. Hina Tabassum (SM'17) is currently an Associate Professor at the Lassonde School of Engineering, York University, Canada, where she joined as an Assistant Professor in 2018. She is also appointed as York Research Chair on 5G/6G-enabled mobility and sensing applications in 2023 for five years. She received her PhD degree from King Abdullah University of Science and Technology (KAUST) in 2013, and completed postdoctoral research at University of Manitoba, Canada, in 2018. Dr. Tabassum has made significant contributions in the development of a diverse spectrum of statistical models and numerical optimization algorithms. These innovations are tailored to enhance the performance of 5G and 6G wireless networks, catering to a wide array of applications encompassing vehicular, aerial, space, and IoT sensing networks. She received Lassonde Innovation Early-Career Researcher Award in 2023, N2Women: Rising Stars in Computer Networking and Communications in 2022, and listed in the Stanford's list of the World's Top Two-Percent Researchers in 2021, 2022, and 2023. She has published over 90 refereed articles in well-reputed IEEE journals, magazines, and conferences (<https://sites.google.com/a/kaust.edu.sa/hina-tabassum/>). Her publications thus far have garnered 5500+ citations with an h-index of 34 (according to Google Scholar). She delivered several tutorials and invited talks, including recently IEEE PIMRC'22, IEEE WCNC'23, IEEE IoT World Forum'23.

Prof. Aryan Kaushik is Assistant Professor at the University of Sussex, UK, since 2021. He has been with University College London, UK, University of Edinburgh, UK, and Hong Kong University of Science and Technology, Hong Kong. He has held visiting appointments at Imperial College London, UK, University of Luxembourg, Luxembourg, Athena RC, Greece, and Beihang University, China. He has been a panellist for the UKRI EPSRC ICT Prioritisation Panel 2023, Editor of two upcoming books on Integrated Sensing and Communications, and Non-Terrestrial Networks to be published by Elsevier, and PhD External Examiner internationally such as at UC3M, Spain. He has been Editor for IEEE Communications Technology News, IEEE OJCOMS, IEEE Communications Letters, Guest Editor for IEEE IoT Magazine, IEEE OJCOMS, and many others, Invited Panel Speaker at IEEE VTC-Spring 2023, EuCNC and 6G Summit 2023, IEEE PIMRC 2023 Workshop, and IEEE BlackSeaCom 2023, and Tutorial/Invited Speaker at IEEE Globecom 2023, IEEE WCNC 2023, EuCNC and 6G Summit 2023, and several other conferences and events globally. He has been involved in Organising Committees and chairing technical program such as at IEEE ICC 2024, IEEE WCNC 2023-24, IEEE WF-PST 2024, IEEE ICMLCN 2024, and many workshops such as at IEEE ICC 2024, IEEE Globecom 2023, IEEE WCNC 2023, IEEE PIMRC 2022-23, etc. <https://sites.google.com/view/aryankaushik/>

Prof. Carlo Fischione is Professor of Electrical Engineering and Computer Science at KTH, Sweden. He is the director of the KTH-Ericsson Data Science Degree Program and Chair of the IEEE Machine Learning for Communications ETI. He received Laurea (summa cum laude) in electronic engineering and Ph.D. degree in electrical and information engineering from the University of L'Aquila, Italy, in 2001 and 2005, respectively. He has held research positions at MIT, Cambridge, MA, USA, (2015 as a Visiting Professor); Harvard

University, Cambridge, MA, USA, (2015 as an Associate Professor); and the University of California at Berkeley, CA, USA, (2004–2005 as a Visiting Scholar and 2007–2008 as a Research Associate). He received “IEEE ComSoc S. O. Rice” Award for the Best IEEE TCOM Paper of 2018, the Best Paper Award of IEEE TII in 2007, the Best Paper Awards at the IEEE MASS 2005 and 2009, the Best Paper Award of the IEEE Sweden VT-COM-IT Chapter in 2014, the Best Business Idea Awards from the VentureCup East, Sweden, in 2010, and the Stockholm Innovation and Growth (STING) Life Science in Sweden in 2014. He is the Co-Founder and the Scientific Director of ELK.

Monday, 24 June 2024 14:00-17:30 Heliconia 3501B
T4: Localization and Sensing in RIS-Aided Wireless Communication Systems

Henk Wymeersch, Chalmers University of Technology; Davide Dardari, University of Bologna; Hyowon Kim, Chungnam National University; Hui Chen, Technology Innovation Institute

Reconfigurable intelligent surfaces (RISs) are planar arrays consisting of large numbers of metamaterials, which can be dynamically optimized to customize the propagation channel of the radio signals. As a breakthrough technology for future communication systems, RISs also have a huge potential in localization and sensing, providing improved performance and ubiquitous coverage. As a consequence, new applications that require location information and situation awareness, such as intelligent transportation and the Internet of Things, will be supported in future systems.

This tutorial aims to provide the audience with an overview of the state-of-the-art in RIS-aided localization and sensing, tackling the practical issues and solutions for RIS anchor calibration, and future applications. Five sections will be covered within this tutorial as follows: (i) 5G/6G localization and Sensing Basics; (ii) RIS-aided Localization; (iii) Sensing in RIS-aided Systems; (iv) Calibration of RIS anchors; (v) Future applications and research directions.

The materials of this tutorial are self-contained, aiming to provide background knowledge for the attendees with the intention of starting research in this area and to provide insights for the researchers already in this area.

Henk Wymeersch obtained the Ph.D. degree in Electrical Engineering/Applied Sciences in 2005 from Ghent University, Belgium. He is currently a Professor of Communication Systems with the Department of Electrical Engineering at Chalmers University of Technology, Sweden. He is also a Distinguished Research Associate with Eindhoven University of Technology. Prior to joining Chalmers, he was a postdoctoral researcher from 2005 until 2009 with the Laboratory for Information and Decision Systems at the Massachusetts Institute of Technology. Prof. Wymeersch served as Associate Editor for IEEE Communication Letters (2009–2013), IEEE Transactions on Wireless Communications (since 2013), and IEEE Transactions on Communications (2016–2018) and is currently Senior Member of the IEEE Signal Processing Magazine Editorial Board. During 2019–2021, he was an IEEE Distinguished Lecturer with the Vehicular Technology Society. His current research interests include the convergence of communication and sensing, in a 5G and Beyond 5G context.

Davide Dardari (Senior Member, IEEE) is currently a Full Professor with the University of Bologna, Italy. He has been a Research Affiliate with the Massachusetts Institute of Technology, USA. His research interests include wireless communications, localization techniques, and distributed signal processing. He has published more than 250 technical articles and played several important roles in various national and European projects. He received the IEEE Aerospace and Electronic Systems Society's M. Barry Carlton Award in 2011 and the IEEE Communications Society's Fred W. Ellersick Prize in 2012. He was the Chair of the IEEE Radio Communications Committee. He was the Co-General Chair of the 2011 IEEE International Conference on Ultra-Wideband and a Co-Organizer of the IEEE International Workshop on Advances in Network Localization and Navigation (ANLN)—ICC 2013–2016 editions. He was also the TPC Chair of the IEEE International Symposium on Personal, Indoor, and Mobile Radio Communications, the TPC Co-Chair of the Wireless Communications Symposium of the 2007/2017 IEEE International Conference on Communications, and the TPC Co-Chair of the 2006 IEEE International Conference on Ultra-Wideband. He served as an Editor for IEEE Transaction on Wireless Communications from 2006 to 2012 and as a guest editor for several

journals. He was a Distinguished Lecturer of the IEEE Communication Society from 2018 to 2019.

Hyowon Kim (S'17-M'21) received the Ph.D. degree from the Department of Electronic Engineering, Hanyang University, Seoul, Korea in 2021. He is currently an Assistant Professor in the Department of Electronics Engineering at Chungnam National University, Daejeon, Korea. He was a Marie Skłodowska-Curie Fellow/Postdoctoral Researcher in the Department of Electrical Engineering at Chalmers University of Technology, Sweden, from 2021 to 2023. He was a Visiting Researcher with the Department of Electrical Engineering, Chalmers University of Technology, Sweden, from 2019 to 2020. He has served as an Associate Editor for EURASIP Journal on Wireless Communications and Networking, as a TPC member for several IEEE conferences, and as a Reviewer for several journals. His main research interests include wireless communication systems, radio-based simultaneous localization and mapping, and integrated sensing/localization/communications in 5G and Beyond 5G communication systems.

Hui Chen received the Ph.D. Degree in Electrical and Computer Engineering from King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia, in 2021. He is currently a senior researcher at Technology Innovation Institute (TII), Abu Dhabi, UAE. From 2021 to 2023, he worked as a Postdoctoral Researcher at Chalmers University of Technology, Gothenburg, Sweden. He is serving/has served as the Reviewer for several journals (e.g., IEEE COMST, JSAC, JSTSP, TWC, TSP, TVT, Nature, etc.), the TPC CoChair for VTC 2024 Spring, the TPC Member for several conferences (ICC 2024, ICC 2023, VTC 2023 Spring, EuCNC & 6G Summit 2023). He is the recipient of ‘Seal of Excellence’ of Marie Skłodowska-Curie Fellowship (2022), and the Ericsson Research Grant (2023). His current research interests include 5G/6G (mmWave/THz) and RIS-aided localization.

Monday, 24 June 2024 9:00-12:30 Heliconia 3502
T5: Multi-Tier Computing in Decentralized 6G Communication Networks

Aydin Sezgin, Ruhr University Bochum; Hayssam Dahrouj, University of Sharjah; Robert-Jeron Reifert, Ruhr University Bochum, Germany

This tutorial is intended to provide the audience with a broad vision of multi-tier computing for the sixth generation (6G) of wireless communication networks by emphasizing on their modeling, resource allocation challenges, and distributed management schemes. To best promote a fair digital service, the tutorial starts from traditional cloud-radio access networks (C-RANs), and then extends to multi-cloud radio access networks (MC-RANs), which already calls for a decentralized optimization approach given the inter-cloud communication limits. In an effort to achieve a digitally sustainable, energy efficient communication landscape, the tutorial further highlights that, through leveraging the power of the central cloud (CC), the close proximity of edge computers (ECs) to the marginalized areas, and the flexibility of uncrewed aerial vehicles (UAVs), a UAVaided hybrid CC/MEC architecture promises to handle the stringent latency and computation requirements of future network applications, e.g., extended reality (XR). The tutorial, in particular, focuses on physical layer resource allocation, advanced multiple access schemes, and user cooperation by harvesting the joint gains of cloud and mobile edge computing under different setups. In each of the tutorial parts, we introduce new concepts to describe the corresponding system models, performance-enhancing methodologies, and techniques from optimization theory for wireless resource management. Backed up by numerical simulations, we illustrate the performance of the proposed architectures in terms of various metrics, namely, sum-rate, energy efficiency, fairness, scalability, and runtime. The tutorial seeks to convey the vision of well-managed resource allocation via multi-tier computing as a crucial factor towards serving future decentralized 6G applications.

Prof. Dr.-Ing. Aydin Sezgin received the Dipl.-Ing. (M.S.) degree in communications engineering and the Dr.-Ing. (Ph.D.) degree in electrical engineering from the TFH Berlin in 2000 and the TU Berlin, in 2005, respectively. From 2001 to 2006, he was with the Heinrich-Hertz-Institut (HHI), Berlin. From 2006 to 2008, he was a Post-doc and

Lecturer at the Information Systems Laboratory, Department of Electrical Engineering, Stanford University. From 2008 to 2009, he was a Post-doc at the Department of Electrical Engineering and Computer Science at the University of California Irvine. From 2009 to 2011, he was the Head of the Emmy-Noether Research Group on Wireless Networks at the Ulm University. In 2011, he was professor at TU Darmstadt, Germany. He is currently a professor of Information Systems and Sciences at the Department of Electrical Engineering and Information Technology at Ruhr University Bochum, Germany. Aydin is interested in signal processing, communication and information theory with focus on wireless networks. He has published several book chapters, more than 40 journal and 140 conference papers on these topics. He has co-authored a book on multi-way communications. He served as Associate Editor for IEEE Transactions on Wireless Communications 2009-2014. He has coauthored papers that received the Best Poster Award from the IEEE Communication Theory Workshop, in 2011, the Best Paper Award from ICCSPA, in 2015, and the Best Paper Award from ICC, in 2019.

Prof. Hayssam Dahrouj received his Ph.D. degree in electrical and computer engineering from the University of Toronto (UofT), Canada, in 2010. Since August 2022, he has been with the Electrical Engineering Department at the University of Sharjah, UAE, where he is currently an associate professor. Prior to that, he was with the Center of Excellence for NEOM Research at King Abdullah University of Science and Technology (KAUST) as a senior research scientist. From June 2015 to June 2020, he was with the Department of Electrical and Computer Engineering at Effat University as an assistant professor, and a visiting scholar at the Computer, Electrical and Mathematical Sciences and Engineering (CEMSE) division at KAUST, where he also was a research associate between April 2014 and May 2015. Prior to joining KAUST, Prof. Dahrouj was an industrial postdoctoral fellow at the University of Toronto, in collaboration with BLiNQ Networks Inc., Kanata, Canada. He is a senior member of the IEEE, an editor of the IEEE Transactions on Vehicular Technology, an associate editor of the Frontiers in Communications and Networks, and a lead-guest editor of the Frontiers special issue on Resource Allocation in Cloud-Radio Access Networks and Fog-Radio Access Networks for 5G Systems. His main research interests include the design and optimization of future wireless systems, smart cities, and integrated space-air-ground networks.

Robert-Jeron Reifert received the B.Sc. and M.Sc. degree in Electrical Engineering and Information Technology from Ruhr University Bochum, Germany, in 2019 and 2021, respectively. He is one of the recipients of the Association for Electrical, Electronic and Information Technologies (VDE) RheinRuhr graduate student award 2021. He is currently pursuing the Ph.D. degree with the Institute of Digital Communication Systems, Ruhr University Bochum, Germany. His research interests include wireless communication systems, multi-tier computing, and resilience in future communication networks.

Monday, 24 June 2024 14:00-17:30 Heliconia 3502

T6: Near-Field XL-MIMO Communication and Sensing Towards 6G: Opportunities and Challenges

Changsheng You, Southern University of Science and Technology; Yong Zeng, Southeast University; Jiayi Zhang, Beijing Jiaotong University

Extremely large-scale multiple-input multiple-output (XL-MIMO) is a promising technology for the sixth-generation (6G) mobile communication networks. By significantly boosting the antenna number or size to at least an order of magnitude beyond current massive MIMO systems, XL-MIMO is expected to unprecedentedly enhance the spectral efficiency and spatial resolution for wireless communication. The evolution from massive MIMO to XL-MIMO is not simply an increase in the array size, but faces new design challenges, in terms of near-field channel modelling, performance analysis, channel estimation, sensing, and practical implementation, which have not been well studied in the existing literature. In this tutorial, we will give a comprehensive tutorial overview on near-field XL-MIMO communication and sensing, aiming to provide useful guidance for tackling the above challenges. To this end, we will first introduce the basic near-field modelling for XL-MIMO, by considering the new characteristics of non-uniform spherical wave (NUSW) and spatial non-stationarity. Next, for near-field XL-MIMO communication systems, the

communication performance analysis will be presented, including near-field signal-to-noise ratio (SNR) scaling laws, beam focusing pattern, achievable rate, and degrees-of-freedom (DoF). Moreover, various communication design issues will be discussed such as near-field beam codebook, beam training, channel estimation, and delay alignment modulation (DAM) transmission. On the other hand, for near-field XL-MIMO sensing, we will elaborate its efficient signal processing techniques as well as near-field sensing performance. Finally, we will point out promising directions to inspire future research on near-field XL-MIMO communication and sensing.

Changsheng You is an Assistant Professor at Southern University of Science and Technology. He received his B.Eng. degree in 2014 from University of Science and Technology of China (USTC) and Ph.D. degree in 2018 from The University of Hong Kong (HKU). He is currently an Assistant Professor at Southern University of Science and Technology, and was a Research Fellow at National University of Singapore (NUS). His research interests include intelligent reflecting surface, UAV communications, edge learning, mobile-edge computing. Dr. You is a Guest Editor for IEEE Journal on Selected Areas in Communications (JSAC), an editor for IEEE Transactions on Wireless Communications (TWC), IEEE Communications Letters (CL), IEEE Transactions on Green Communications and Networking (TGCN), and IEEE Open Journal of the Communications Society (OJ-COMS). He has published more than 60 papers in IEEE leading journals and conferences in wireless communications, among which three papers are listed as ESI Hot Papers, and nine are ESI Highly Cited; his Google Scholar Citation has reached 12,000. He received the IEEE Communications Society Asia-Pacific Region Outstanding Paper Award in 2019, IEEE ComSoc Best Survey Paper Award in 2021, IEEE ComSoc Best Tutorial Paper Award in 2023. He is listed as the Highly Cited Chinese Researcher.

Yong Zeng is a Professor with the National Mobile Communications Research Laboratory, Southeast University, China, and also with the Purple Mountain Laboratories, Nanjing, China. He received the Bachelor of Engineering and Ph.D. degrees from Nanyang Technological University, Singapore. From 2013 to 2018, he was a Research Fellow and Senior Research Fellow at National University of Singapore. From 2018 to 2019, he was a Lecturer at the School of Electrical and Information Engineering, the University of Sydney, Australia. Prof. Zeng was listed as Highly Cited Researcher by Clarivate Analytics for four consecutive years (2019-2022). He is the recipient of the Australia Research Council (ARC) Discovery Early Career Researcher Award (DECRA), 2020 IEEE Marconi Prize Paper Award in Wireless Communications, 2018 IEEE Communications Society Asia-Pacific Outstanding Young Researcher Award, 2020 & 2017 IEEE Communications Society Heinrich Hertz Prize Paper Award, 2021 IEEE ICC Best Paper Award, and 2021 China Communications Best Paper Award. He serves as an Associated Editor for IEEE Communications Letters and IEEE Open Journal of Vehicular Technology, Leading Guest Editor for IEEE Wireless Communications on "Integrating UAVs into 5G and Beyond" and China Communications on "Network-Connected UAV Communications". He is the Symposium Chair for IEEE Globecom 2021 Track on Aerial Communications, the workshop co-chair for ICC 2018-2023 workshop on UAV communications, the tutorial speaker for IEEE Globecom 2018/2019 and ICC 2019 tutorials on UAV communications.

Jiayi Zhang received the Ph.D. degree of Communication Engineering from Beijing Jiao-tong University, China in 2014. Since 2016, he has been a Professor with School of Electronic and Information Engineering, Beijing Jiaotong University, China. From 2014 to 2016, he was a Post-doctoral Research Associate with the Department of Electronic Engineering, Tsinghua University, China. From 2014 to 2015, he was also a Humboldt Research Fellow in Institute for Digital Communications, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany. His current research interests include cell-free massive MIMO, reconfigurable intelligent surface (RIS), communication theory and applied mathematics. Dr. Zhang received the Best Paper Awards at IEEE ICC 2023, WCSP 2017 and APCC 2017, the URSI Young Scientist Award in 2020, and the IEEE ComSoc Asia-Pacific Outstanding Young Researcher Award in 2020. He was recognized as an exemplary reviewer of the IEEE COMMUNICATIONS LETTERS in 2015-2017. He was also recognized as an exemplary reviewer of the IEEE TRANSACTIONS ON COMMUNICATIONS in 2017-2019. He was the Lead Guest Editor of the special issue on "Multiple Antenna Technologies for Beyond 5G" of the IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS. He was

the Editor of IEEE COMMUNICATIONS LETTERS from 2017-2021. He currently serves as an Associate Editor for IEEE TRANSACTIONS ON COMMUNICATIONS and IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS.

Monday, 24 June 2024 9:00-12:30 Heliconia 3503

T7: On the Road to Quantum Communications

Lajos Hanzo, University of Southampton

Moore's laws has indeed prevailed since he outlined his empirical rule-of-thumb in 1965, but based on this trend the scale of integration is set to depart from classical physics, entering nano-scale integration, where the postulates of quantum physics have to be obeyed. The quest for quantum-domain communication solutions was inspired by Feynman's revolutionary idea in 1985: particles such as photons or electrons might be relied upon for encoding, processing and delivering information. Hence in the light of these trends it is extremely timely to build an interdisciplinary momentum in the area of quantum communications, where there is an abundance of open problems for a broad community to solve collaboratively. In this workshop-style interactive presentation we will address the following issues:

We commence by highlighting the nature of the quantum channel, followed by techniques of mitigating the effects of quantum decoherence using quantum codes.

Then we bridge the subject areas of large-scale search problems in wireless communications and exploit the benefits of quantum search algorithms in multi-user detection, in joint-channel estimation and data detection, localization and in routing problems of networking, for example.

We survey advances in quantum key distribution networks.

Lajos Hanzo (<http://www-mobile.ecs.soton.ac.uk>, https://en.wikipedia.org/wiki/Lajos_Hanzo) is a Fellow of the Royal Academy of Engineering, FIEEE, FIET, Fellow of EURASIP and a Foreign Member of the Hungarian Academy of Sciences. He coauthored 2000+ contributions at IEEE Xplore and 19 Wiley-IEEE Press monographs. He was bestowed upon the IEEE Eric Sumner Technical Field Award.

Monday, 24 June 2024 9:00-12:30 Heliconia 3504

T9: Semantic Communications: Joint coding, Transmission and Applications

Wei Chen, Beijing Jiaotong University; Zhijin Qin, Tsinghua University

In this tutorial, we will first introduce the concept of the semantic communication and highlight its key difference from typical communications. We then detail the general model and performance metrics of semantic communications. Afterwards, we will present the latest work on deep learning enabled semantic communications for text, speech, and image transmission. By employing a semantic encoder and channel encoder and dealing with their jointly design, the semantic communication system could achieve a significant performance improvement in terms of semantic information exchange. Besides, those massive amount of data are usually high dimensional, multi modal, distributed and required to be exchanged in an efficient, effective, and timely manner. We will provide a unified semantic communication structure to support multi modal data transmission for multi-tasks.

Dr. Wei Chen is a Professor at Beijing Jiaotong University, China. He received the B.Eng. degree and M.Eng. degree from Beijing University of Posts and Telecommunications, China, in 2006 and 2009, respectively, and the Ph.D. degree in Computer Science from the University of Cambridge, UK, in 2013. Later, he was a Research Associate with the Computer Laboratory, University of Cambridge from 2013 to 2016. His current research interests include semantic communications, AI/ML for PHY and sparse signal processing. He was a recipient of the 2013 IET Wireless Sensor Systems Premium Award, the 2017 International Conference on Computer Vision (ICCV) Young Researcher Award, the 2019 CCF-Tencent Rhino Bird Innovation Award, the 2020 IWCMC 5G-EWNAT Workshop Best Paper Award, and

2023 IEEE/CIC ICC Best Paper Award. He serves as the lead guest editor for IEEE JSTSP Special Issue on Intelligent Signal Processing and Learning for Next Generation Multiple Access.

Dr. Zhijin Qin is an Associate Professor at Tsinghua University, China. She was with Queen Mary University of London and Lancaster University as a lecturer as well as with Imperial College London as a research associate from 2016 to 2022. She obtained her PhD degree in 2016 and the bachelor degree in 2012. Her research interests include semantic communications and sparse signal processing in wireless communications. She serves as an area editor of IEEE JSAC Series on Machine Learning in Communications and Networks, an associate editor of IEEE Transactions on Communications, IEEE Transactions on Cognitive Communications and Networking, and IEEE Communications Letters. Dr. Qin has served as the symposium cochair for IEEE VTC Fall 2019 and IEEE Globecom 2020/2021. She received the 2017 IEEE Globecom Best Paper Award, the 2018 IEEE Signal Processing Society Young Author Best Paper Award, the 2021 IEEE Communications Society SPCC Early Achievement Award, the 2022 IEEE Communications Society Fred W. Ellersick Prize, the 2023 IEEE ICC Best Paper Award, and 2023 IEEE Signal Processing Society Best Paper Award.

Monday, 24 June 2024 9:00-12:30 Heliconia 3505

T11: Synergizing Integrated and Intelligent 6G Connectivity using ISAC and RIS

Aryan Kaushik, University of Sussex; Marco Di Renzo, Paris-Saclay University

The recently adopted IMT-2030 framework by ITU-R envisions sixth generation (6G) networks to provide integrated, intelligent, multi-function and ubiquitous connectivity for reliable, sustainable and resilient communications. Two major technologies of integrated sensing and communications (ISAC) and reconfigurable intelligent surfaces (RIS) herald a new era of connectivity by transcending conventional communication networks and infrastructure to highly energy efficient, with ultra-high data rates, shared hardware and spectral resources, smart radio environment, with exploration of high frequency bands such as millimeter wave (mmWave), terahertz (THz), and multiple use cases for 6G such as simultaneous imaging, mapping and localization, augmented human sense, smart health care, automation and robotics, internet-of-things (IoT), public safety, etc. Furthermore, considering recent Third Generation Partnership Project (3GPP) R19, ISAC will play a vital role in 6G wireless standards, with RIS, beyond-diagonal RIS, H-MIMO, large intelligent surfaces, electromagnetic signal and information theory (ESIT) are some of the technologies expected in future 3GPP releases, e.g., R20+. This tutorial will present a comprehensive overview of emerging ISAC and RIS based 6G wireless communications including vision, timeliness with 5G-Advanced and 6G standardization, fundamentals, trends, challenges, use cases, emerging problem design concepts, and synergies between RIS and ISAC technologies. Furthermore, this tutorial will cover key enabling technologies for RIS and ISAC such as dynamic beam forming, AI, low resolution quantization, wave-domain signalling, index modulation, deep reinforcement learning, RIS for radio frequency (RF) sensing, RIS aided ISAC for non-terrestrial networks, and applications leading to the development of exciting new vertical frameworks.

Prof. Aryan Kaushik is Assistant Professor at the University of Sussex, UK, since 2021. Prior to that, he has been with University College London, UK, University of Edinburgh, UK, and Hong Kong University of Science and Technology, Hong Kong. He has also held visiting appointments at Imperial College London, UK, University of Luxembourg, Luxembourg, Athena RC, Greece, and Beihang University, China. He has been External PhD Examiner internationally such as at Universidad Carlos III de Madrid, Spain, in 2023. He has been an Invited Panel Member at the UK EPSRC ICT Prioritisation Panel in 2023 plus Proposal Reviewer for the EPSRC, and he has led several collaborative projects forging industry and academic collaborations on topics of strategic importance. He is also a member of the One6G Association. He has been Editor of two upcoming books on ISAC and 6G NTN by Elsevier, and several journals such as IEEE Open Journal of the Communications Society (Best Editor Award 2023), IEEE

Communications Letters (Exemplary Editor 2023), IEEE Communications Technology News (initiated IEEE CTN Podcasts Series) and several IEEE ComSoc journal/magazine special issues. He has been an invited/keynote and tutorial speaker for over 48 academic and industry events, and conferences globally such as at IEEE ICC 2024, IEEE ICMLCN 2024, IEEE GLOBECOM 2023, IEEE WCNC 2023, IEEE VTC2023-Spring, EuCNC and 6G Summit 2023, One6G Summit 2023, and many others. He has been chairing in Organizing and Technical Program Committees of over 6 flagship IEEE conferences such as IEEE ICC 2024-26, IEEE WCNC 2023-24, IEEE ICMLCN 2024 and IEEE WF-PST 2024. He has been actively organizing workshops (as General Chair of over 15 workshops) for IEEE ComSoc conferences globally such as at IEEE ICC 2024, IEEE Globecom 2023, IEEE WCNC 2023-24, IEEE PIMRC 2022-23, and several others. Website: <https://sites.google.com/view/aryankaushik>

Prof. Marco Di Renzo (Fellow, IEEE) received the Laurea (cum laude) and Ph.D. degrees in electrical engineering from the University of L'Aquila, Italy, in 2003 and 2007, respectively, and the Habilitation à Diriger des Recherches (Doctor of Science) degree from University Paris-Sud (currently Paris-Saclay University), France, in 2013. Currently, he is a CNRS Research Director (Professor) at Paris-Saclay University – CNRS and CentraleSupélec, Paris, France. At Paris-Saclay University, he serves as the Coordinator of the Communications and Networks Research Area of the Laboratory of Excellence DigiCosme, as a Member of the Admission and Evaluation Committee of the Ph.D. School on Information and Communication Technologies, and as a Member of the Evaluation Committee of the Graduate School in Computer Science. He is a Founding Member and Academic Vice Chair of the ISG on Reconfigurable Intelligent Surfaces (RIS) within the ETSI, where he serves as the Rapporteur for the work item on communication models, channel models, and evaluation methodologies. He is a Fellow of the IEEE, IET, and AALA; an Ordinary Member of the European Academy of Sciences and Arts, an Ordinary Member of the Academia Europaea; and a Highly Cited Researcher. Also, he is a Fulbright Fellow at City University of New York, USA, and was a Nokia

Foundation Visiting Professor and a Royal Academy of Engineering Distinguished Visiting Fellow. His recent research awards include the 2021 EURASIP Best Paper Award, the 2022 IEEE COMSOC Outstanding Paper Award, the 2022 Michel Monpetit Prize conferred by the French Academy of Sciences, the 2023 EURASIP Best Paper Award, the 2023 IEEE COMSOC Fred W. Ellersick Prize, and the 2023 IEEE COMSOC Heinrich Hertz Award. He also served as the Editor-in-Chief of IEEE Communications Letters.

The following tutorials have been cancelled.

T2: B5G/6G Network Slicing for V2X Services: Technics, Standards, and Challenges

Jiadao Wang, Jiajia Liu, Northwestern Polytechnical University

T8: Recent Development in Vehicular Communication Network Security

Yi Qian, University of Nebraska-Lincoln, USA

T10: Statistical Inference via Gaussian Approximation in 6G Wireless Communication Systems: Bridging Theory to Practice

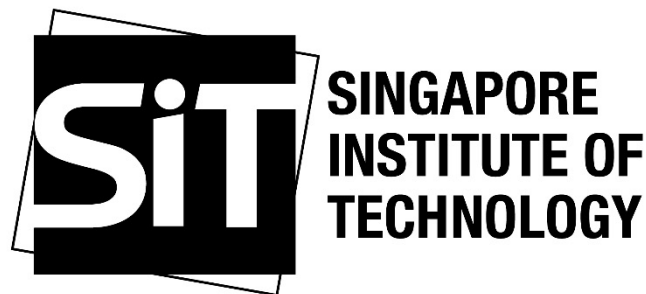
Takumi Takahashi, Osaka University; Hiroki Iimori, Ericsson; Koya Sato, The University of Electro-Communications, Japan

T12: Waveform Design and Signal Processing For Integrated Sensing and Communication System

Yonghong Zeng, Sumei Sun, Yuhong Wang, Institute for Infocomm Research, ASTAR

T13: Wireless Communications in the Wave Domain: Reconfigurable Intelligent Surface, Holographic MIMO, and the like

Marco Di Renzo, CentraleSupélec, Paris-Saclay University



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One of our Applied Research Centres, the Future Communications Translation Lab (FCTLab), provides Testbed-as-a-Service to support companies in rapid prototyping and testing of 5G use cases. Leveraging capabilities in robotics, AR/VR, drones, video analytics, and cybersecurity, FCTLab offers a platform for innovation, enabling companies to explore new avenues for development.

Please visit our website at www.sit-fctlab.org for more information about the services we offer.

Keynotes

Tuesday, 25 June 2024, 9:00–9:45 Auditorium

Cell-free Massive MIMO for Next Generation Multiple Access

Michalis Matthaiou, *Queen's University Belfast*

The next generation multiple access (NGMA) techniques are expected to achieve massive and ubiquitous access for a large number of devices and provide high spectral efficiency in ultra-dense networks. To meet these unprecedented mobile traffic demands, a paradigm shift from the conventional cellular networks towards distributed communication systems is required. Cell-free massive multiple-input multiple-output (CF-mMIMO) is considered as a practical and scalable embodiment of the distributed/ network MIMO systems, which inherits not only the key benefits from colocated massive MIMO systems, but also the macro-diversity gain from the distributed systems. In this paper, we provide an overview of current research efforts on the CF-mMIMO systems and their promising future application scenarios. Then, we elaborate on the new requirements for CF-mMIMO networks and propose a unifying framework for NGMA based on virtual full-duplex and CF-mMIMO.

Michalis Matthaiou is the Chair Professor of Communications Engineering and Signal Processing and Deputy Director of the Centre for Wireless Innovation (CWI) at Queen's University Belfast, U.K. Under his co-leadership, CWI has become the largest physical layer wireless base in the UK. His research interests span signal processing for wireless communications, beyond massive MIMO, intelligent reflecting surfaces, mm-wave/THz systems and deep learning for communications. He has published in excess of 280 papers on these topics, including some 130 IEEE journal papers.

Dr. Matthaiou and his coauthors received the IEEE Communications Society (ComSoc) Leonard G. Abraham Prize

Tuesday, 25 June 2024, 9:45–10:30 Auditorium

Integrated Security, Privacy and Trust in Goal-Oriented Next-Generation Vertical IoT Systems

Xianbin Wang, *Western University*

The evolution of wireless communication technologies from 1G to 6G and their convergence with diverse applications have led to the paradigm shift in the designs of next-generation wireless networks. Among the numerous technical challenges, one fundamental hurdle in 6G-enabled vertical Internet of Things (IoT) systems is how to guarantee tailored security, privacy and trust, while meeting their stringent requirements on system operational effectiveness.

The focus of this presentation is to analyze the integrated security, privacy and trust provision in the 6G-enabled vertical IoT systems, identify the key enabling technologies, present the related ongoing research activities and future directions. Specifically, this talk will cover:

- i. The evolving challenges of vertical IoT systems, such as their diverse service requirements, goal-oriented operation, as well as their integrated security, privacy and trust issues;
- ii. Key enabling technologies for integrated security and privacy, including intelligent physical layer security, integrated security and communication service provision, trust evaluation in next-generation systems and processes;
- iii. Trust in goal-oriented 6G systems for value-realization, including a situation-aware trust definition and its application in goal-oriented 6G systems as well as the intelligent integration of dynamic trust evaluation and collaborator selection for efficient task completion.

Xianbin Wang (Fellow, IEEE) received his Ph.D. degree in electrical and computer engineering from the National University of Singapore in 2001.

He is currently a Professor and a Tier-1 Canada Research Chair with Western University, Canada. Prior to joining Western University, he was with the Communications Research Centre Canada as a Research Scientist/Senior Research Scientist from 2002 to 2007. From 2001 to 2002, he was a System Designer at STMicroelectronics. His current research interests include 5G/6G technologies, Internet of Things, communications security, machine learning, and intelligent communications. He has over 600 journal and conference papers, in addition to 30 granted and pending patents and several standard contributions.

Dr. Wang is a Fellow of the Canadian Academy of Engineering and a Fellow of the Engineering Institute of Canada. He has

in 2017. He currently holds the ERC Consolidator Grant BEATRICE (2021-2026) focused on the interface between information and electromagnetic theories. To date, he has received the prestigious 2023 Argo Network Innovation Award, the 2019 EURASIP Early Career Award and the 2018/2019 Royal Academy of Engineering/The Leverhulme Trust Senior Research Fellowship. His team was also the Grand Winner of the 2019 Mobile World Congress Challenge. He is currently the Editor-in-Chief of Elsevier Physical Communication, a Senior Editor for IEEE Wireless Communications Letters and IEEE Signal Processing Magazine, and an Associate Editor for IEEE Transactions on Communications. He is an IEEE Fellow.

received many prestigious awards and recognitions, including the IEEE Canada R. A. Fessenden Award, Canada Research Chair, Engineering Research Excellence Award at Western University, Canadian Federal Government Public Service Award, Ontario Early Researcher Award, and nine Best Paper Awards. He was involved in many IEEE conferences, including GLOBECOM, ICC, VTC, PIMRC, WCNC, CCECE, and CWIT, in different roles, such as General Chair, TPC Chair, Symposium Chair, Tutorial Instructor, Track Chair, Session Chair, and Keynote Speaker. He serves/has served as the Editor-in-Chief, Associate Editor-in-Chief, and editor/associate editor for over ten journals. He was the Chair of the IEEE ComSoc Signal Processing and Computing for Communications (SPCC) Technical Committee and is currently serving as the Central Area Chair of IEEE Canada.

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HOW CELLULAR-V2X (C-V2X) MAKES DRIVING SAFER AND MORE EFFICIENT

Cellular-V2X (C-V2X) uses 3GPP standardized LTE or 5G NR mobile connectivity to send and receive signals from a vehicle to other vehicles, pedestrians or infrastructure, enabling applications to improve road safety and accelerate the progress of autonomous driving.

Direct, short-range interface (e.g. DSRC) operating in the 5.9 GHz frequency band, enabling direct, reliable and low latency communication between vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I) and vehicle-to-pedestrian (V2P).

Network, long-range interface (e.g. 4G/LTE or 5G NR) operating in the standard cellular (4G LTE 700 MHz to 7.125 GHz and 5G NR 470 MHz to 3.8 GHz) frequency bands, enabling communications to a network (V2N).

Standards bodies
Selected global and regional standards bodies for Cellular-V2X:

Region	Standards bodies
Global	3GPP (3rd Generation Partnership Project)
Europe	ETSI (European Telecommunications Standards Institute)
United States	IEEE (Institute of Electrical and Electronics Engineers) SAE (Society of Automotive Engineers)
China	CCSA (China Communications Standards Association) CCRC (China Communications Research Institute) CCIT (China Institute of Telecommunications)

C-V2X applications overview

Category	Communication type	Abbreviation	Service
Safety	V2V	IEEE 802.11p	For use in Cellular-Based Safety
		IEEE 802.11p	Emergency Call/Alert Forwarding
		IEEE 802.11p	IEEE 802.11p V2V (V2V) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2V (V2V) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2V (V2V) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2V (V2V) Change of Lane
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		IEEE 802.11p	IEEE 802.11p V2V (V2V) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2V (V2V) Change of Lane
Efficiency	V2I	IEEE 802.11p	Green Light Intersection Signal Advisory
		IEEE 802.11p	IEEE 802.11p V2I (V2I) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2I (V2I) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2I (V2I) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2I (V2I) Change of Lane
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		IEEE 802.11p	IEEE 802.11p V2I (V2I) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2I (V2I) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2I (V2I) Change of Lane
Information and management	V2N	IEEE 802.11p	Vehicle-to-Cloud Management
		IEEE 802.11p	Customer-to-Cloud-to-Cloud Management
		IEEE 802.11p	IEEE 802.11p V2N (V2N) Change of Lane
		IEEE 802.11p	IEEE 802.11p V2N (V2N) Change of Lane
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		IEEE 802.11p	IEEE 802.11p V2N (V2N) Change of Lane



Wednesday, 26 June 2024, 9:00–9:45 Auditorium

Keynote

Yan Chen, *Senior Expert of Wireless Communications, Huawei*

Dr. Yan Chen received her B.Sc. and Ph.D. degrees from Chu Kochen Honored College and Institute of Information and Communication Engineering from Zhejiang University in 2004 and 2009, respectively. She was a visiting researcher at Hong Kong University of Science and Technology from 2008 to 2009. She joined Huawei Technologies Shanghai in 2009 and from 2010 to 2013, she was the project manager and technical leader of Huawei internal Green Radio project studying energy efficient solutions for wireless networks and also served as technical leader of the Green Transmission Technology (GTT) project at GreenTouchTM Consortium. Since 2013, she is one of the key technical leaders on 5G air interface design and the

related 3GPP standardization in Huawei, focusing on multiple access including NOMA transceivers, grant-free massive access, and ultra-reliable and low-latency communications. Now she is leading the 6G vision study in Huawei. Her research interests include novel 6G use cases and key capabilities such as collaborative robotics, new enabling technologies and architectures such as integrated sensing and communication (ISAC), network for distributed learning and inference, next generation multiple access (NGMA), as well as system level evaluation methodologies for new usage scenarios. She won the IEEE Communication Society Award for Advances in Communication in 2017.

Wednesday, 26 June 2024, 9:45–10:30 Auditorium

On the Evolution of Railway Communications

Nicholas Gresset, *Research Manager, Mitsubishi Electric R&D Centre Europe*

The Future Railway Mobile Communication System (FRMCS) is a global standard, successor of the current GSM-R for the European Train Control System (ETCS). FRMCS is based on the 5G framework both at the radio access network and the core network. It defines a new architecture to support all the services required for a full digitalization of the railway systems operation. This talk will provide a brief history and current status of FRMCS standardization and trial works, and provide insights on the next challenges and evolutions that could be supported by the current research activities in vehicular communications.

Dr. Nicolas Gresset is an accomplished professional with over two decades of experience in industrial research and development. Committed to advancing communication technologies and shaping the future of industrial connectivity, he currently serves as Research Manager at Mitsubishi Electric R&D Centre Europe in France. Nicolas leads the Wireless Communication System team, driving research, innovation, and standardization efforts.

His interests span the design and optimization of wireless communication systems across diverse domains, including railway, automotive, factory automation, robotics, and space. His team's expertise ranges from radio access to core network and automatic control. Nicolas is an active inventor with over 100 granted patent families. He also contributes to the field through his role as an author of research articles and proudly holds the distinction of being a Senior Member of IEEE.

Thursday, 27 June 2024, 9:00–9:45 Auditorium

Shedding Light on Non-Orthogonal Multiple Access

Hikmet Sari, *Nanjing University of Posts and Telecommunications*

Non-Orthogonal Multiple Access (NOMA) has been a hot research topic in wireless communications over the past decade. Although there are other versions of NOMA, the literature on the subject has been heavily focused on Power-Domain NOMA (PD-NOMA), which imposes a power imbalance between user signals and employs a successive interference cancellation (SIC) receiver to detect them. The interest in this technique was driven by an information theoretic argument that orthogonal multiple access is not optimum in general and that superposition coding coupled with SIC provides an optimum solution for multiple access. In this talk, we revisit the concept of PD-NOMA, discuss it from a pragmatic angle, and we make several rather surprising observations. In particular, we highlight the fact that the basic principle of PD-NOMA on the downlink is a pure signal constellation design and that a threshold detector is actually all that is needed at the receiver. For the uplink, we first point out the fairness issue related to the disparity between the users' data rates achieved by the SIC receiver and the fair rates suggested by the power distribution among users. Next, using a unified system model that covers both PD-NOMA and Multi-User MIMO, we summarize the results of a recent study on the power imbalance in PD-NOMA, which revealed that the optimum in terms of the average bit error rate is achieved when the power imbalance is reduced to 0, i.e., when this technique coincides with Multi-User MIMO. This result tends to question the concept of PD-NOMA in general, and it suggests that this technique is only suitable for hierarchical multiple access, i.e., in scenarios where high-profile user equipment are paired with low-power devices like sensors. We also briefly recall NOMA-2000, which avoids the basic problems of PD-NOMA.

Hikmet Sari is a Professor at Nanjing University of Posts and Telecommunications, Nanjing, China. From 2003 to 2016, he was Professor and Department Head at Supelec, near Paris, and Chief Scientist of Sequans Communications. Prior to this, he held various research and managerial positions in industry including Philips, SAGEM, Alcatel, Pacific Broadband Communications, and Juniper Networks. He holds an Engineering Diploma and a Ph.D. from the ENST, Paris, France. He was elevated to the IEEE Fellow Grade in 1995 for his contributions during the 1980s to advanced signal processing for digital microwave radio systems, but he is best known today for

his pioneering work in the 1990s on OFDM, OFDMA, and Single-Carrier Transmission with Frequency-Domain Equalization (SC-FDE), which significantly influenced the IEEE 802.16e and the 3GPP LTE standards. He also published the first papers on Non-Orthogonal Multiple Access (NOMA) back in the year 2000. His distinctions include election to the IEEE Fellow Grade (1995), the Andre Blondel Medal (1995), the Edwin H. Armstrong Achievement Award (2003), the Harold Sobol Award (2012), election to the European Academy (2012), election to the Science Academy of Turkey (2012), and the Heinrich Hertz Award (2021).

Thursday, 27 June 2024, 9:45–10:30 Auditorium

Movable Antenna (MA) Aided Wireless Communications and Sensing: Opportunities and Challenges

Rui Zhang, *The Chinese University of Hong Kong, Shenzhen and National University of Singapore*

Movable antenna (MA) has been recently recognized as a promising technology for enhancing wireless system performance by exploiting wireless channel spatial variation via antenna movement at the transmitter and/or receiver. In this talk, we provide a comprehensive overview of MAs, including their historical development, practical architectures and implementation methods, contemporary applications in wireless communications and sensing (ISAC), as well as mathematical models, design issues (such as channel estimation, continuous/discrete movement optimization) and promising approaches to solve them. In particular, we present a new field-response-based channel model, which greatly facilitates the analysis, design and optimization of MA-aided wireless systems. Based on this model, various performance advantages of MAs over conventional fixed-position antennas (FPAs) are demonstrated, in terms of spatial diversity/multiplexing, interference mitigation, flexible beamforming, and wireless sensing. Furthermore, a general six-dimensional MA (6DMA) system is introduced, which consists of distributed antenna surfaces that can be independently adjusted in terms of 3D position and 3D rotation to achieve the greatest flexibility in movement. We show that by jointly designing the positions and rotations of all 6DMA surfaces equipped at the base station (BS) based on the users' statistical channel information, the wireless network capacity can be significantly improved over the existing BS with FPAs (e.g., sector antenna arrays). Finally, we shed light on the research directions worthy of investigation in future work to unleash the full potential of MAs for wireless networks.

Dr. Rui Zhang received the B.Eng. (first-class Hons.) and M.Eng. degrees from National University of Singapore and the Ph.D. degree from Stanford University, all in electrical engineering. He is now a Principal's Diligence Chair Professor in School of Science and Engineering and Shenzhen Research Institute of Big Data, The Chinese University of Hong Kong, Shenzhen. He is also a Professor with the Department of Electrical and Computer Engineering, National University of Singapore. His current research interests include wireless power transfer, UAV/satellite communications, intelligent reflecting surface (IRS) and reconfigurable MIMO systems. He has published over 500 papers, which have been cited more than 90,000 times with the h-index over 135 (Google Scholar). He has been listed as a Highly Cited Researcher by Thomson Reuters / Clarivate Analytics since 2015. He was the recipient of the IEEE Communications Society Asia-Pacific Region Best

Young Researcher Award in 2011, the Young Researcher Award of National University of Singapore in 2015, the Recognition Award of WTC, SPCC and TCCN Technical Committees of the IEEE Communications Society in 2020, 2021 and 2023, respectively. He received 15 IEEE Best Journal Paper Awards, including the IEEE Marconi Prize Paper Award in Wireless Communications (twice), the IEEE Communications Society Heinrich Hertz Prize Paper Award (thrice), the IEEE Communications Society Stephen O. Rice Prize, the IEEE Signal Processing Society Best Paper Award, etc. He has served as an Editor for several IEEE journals, including TWC, TCOM, JSAC, TSP, etc., and as TPC co-chair or organizing committee member for over 30 international conferences. He served as an IEEE Distinguished Lecturer of IEEE Communications Society and IEEE Signal Processing Society. He is a Fellow of IEEE and the Academy of Engineering Singapore.

Registration

Registration will take place in the Heliconia Hallway. Hours are:

- | | | | |
|-------------------|-------------|---------------------|-------------|
| • Monday 24 June | 0800 – 1730 | • Wednesday 26 June | 0800 – 1730 |
| • Tuesday 25 June | 0730 – 1730 | • Thursday 27 June | 0800 – 1730 |

Social Events

Coffee breaks will take place in the Bayview Foyer. Lunches are included in the full registration. The lunches will be in the Heliconia Junior Ballroom. You will need your ticket to gain entry. Do not forget these as they cannot be replaced. The reception on Monday evening, which is also in the Heliconia Junior Ballroom, is open to all attendees, including student and life registrations.

Our banquet on the 26th of June will be a little different from what we usually do. Instead of a formal dinner, we are purchasing admission tickets and food vouchers for Universal Studios. This will be available for all full conference registrations, one-day registrations purchased for Wednesday, and anyone who purchased additional banquet tickets. These tickets will be available for use from 24 June to 24 July 2024.

We are ending the conference at 4:00 on Wednesday the 26th, and will have transportation available from the Marina Bay Sands Convention Center. You will need to sign an IEEE waiver when you arrive at the conference to receive your tickets.

Panel

Wednesday, 26 June 2024, 11:00-12:30 Heliconia Junior Ballroom

Beyond Communication Capabilities in 5.5G and 6G

Moderator: **Qingqing Wu** *Huawei Technologies, Canada*
Panelists: **Takehiro Nakamura,** *NTT Laboratories, Japan*
Zhisheng Niu *Tsinghua University, China*
Xianbin Wang *Western University, Canada*
Jianmin Lu *Huawei Technologies, China*

As the application of 5G becomes widely spread into our daily life, ITU-R has published its Framework Recommendation towards 2030 and beyond, commonly known as the global 6G vision. Six usage scenarios and their associated capabilities are identified, including enhanced communication scenarios and beyond communication scenarios. Together with the vision, cmWave band has also been identified for further investigation, which makes possible of even higher dimension MIMO at both network and user side, bringing multi-fold capacity and spectrum efficiency gain to support immersive communication. Meanwhile, the standardization of 5.5G has been initiated since Release 18 of 3GPP, which is formally called 5G Advanced and will continue its evolution into the following Releases. Along the technology evolution, 5.5G has somehow touched all of the six scenarios defined in the 6G vision. In this panel, we will focus the discussion on the beyond communication aspects that have been studied for 5.5G and 6G such as AI and sensing, including the potential use cases, enabling technologies, and standard progress.

Thursday, 27 June 2024, 11:00-12:30 Heliconia Junior Ballroom

Standards for Advanced Air Mobility

Moderator: **Qingqing Wu** *Shanghai Jiao Tong University, China*
Panelists: **Abdellah Chehri** *Royal Military College of Canada*
Gürkan Gür *Zurich University of Applied Sciences, Switzerland.*
Keven Gambold *Unmanned Experts, USA*
Sastry Kompella *Nexcepta Inc, USA*

Advanced Air Mobility (AAM) is becoming a reality now. As the industry is moving enthusiastically towards bringing air taxis and air ambulances to our neighbourhoods, the federal aviation organizations around the world are working towards establishing the regulations needed for the safety and security of people and infrastructure in the airspace and on the ground. Innovate28, the AAM implementation plan, released recently by the Federal Aviation Administration in the US, calls for a crawl-walk-run approach to introducing AAM services over the next five years. A recent article in IEEE Spectrum lists the challenges involved in bringing AAM services to the communities and highlights need for developing standards. This panel discusses various standardization efforts including IEEE P1920.1, IEEE 1920.2, 3GPP, ASTM, RTCA, and EUROCAE.

Dr. Qingqing Wu is an Associate Professor with Shanghai Jiao Tong University. His current research interest includes intelligent reflecting surface (IRS), unmanned aerial vehicle (UAV) communications, and MIMO transceiver design. He has coauthored more than 100 IEEE journal papers with 30+ ESI highly cited papers and 10+ ESI hot papers, which have received more than 29,000 Google citations. He has been listed as the Clarivate ESI Highly Cited Researcher since 2021, the Most Influential Scholar Award in AI-2000 by Aminer since 2021 and World's Top 2% Scientist by Stanford University since 2020.

He was the recipient of the IEEE Communications Society Fred Ellersick Prize, IEEE Best Tutorial Paper Award in 2023, Asia-Pacific Best Young Researcher Award and Outstanding Paper Award in 2022, Young Author Best Paper Award in 2021 and 2024, the Outstanding Ph.D. Thesis Award of China Institute of Communications in 2017, the IEEE ICC Best Paper Award in 2021, and IEEE WCSP Best Paper Award in 2015. He was the Exemplary Editor of IEEE Communications Letters in 2019 and the Exemplary Reviewer of several IEEE journals. He serves as an Associate/Senior/Area Editor for IEEE Transactions on Wireless Communications, IEEE Transactions on Communications, IEEE Communications Letters, IEEE Wireless Communications Letters. He is the Lead Guest Editor for IEEE Journal on Selected Areas in Communications. He is the workshop co-chair for IEEE ICC 2019-2023 and IEEE GLOBECOM 2020. He serves as the Workshops and Symposia Officer of Reconfigurable Intelligent Surfaces Emerging Technology Initiative and Research Blog Officer of Aerial Communications Emerging Technology Initiative. He is the

Chair of the IEEE ComSoc Young Professional AP Committee and the Chair of IEEE VTS Drone Committee.

Dr. Abdellah Chehri is an Associate Professor at the Royal Military College of Canada (RMC), Kingston, Ontario. Before joining the RMC, he was an associate professor at the University of Quebec (UQAC). He has an affiliate professor at the University of Quebec UQO, UQAT and an adjunct professor at the University of Ottawa. From 2009-2012, he worked as a research fellow at the University of Ottawa. Dr. Chehri completed his Ph.D. at University Laval (Canada) and his Master's studies at University Nice-Sophia Antipolis-Eurecom (France). He has served as guest/associate editor for several well-reputed journals. Dr. Chehri is a Senior Member of IEEE, a member of the IEEE Communication Society (ComSoc), IEEE Vehicular Technology Society (VTS), IEEE Photonics Society, IEEE Public Safety Transportation Committee Co-Chair, and IEEE Canadian Humanitarian Initiatives Committee.

Gürkan Gür is a senior researcher at Zurich University of Applied Sciences (ZHAW) InIT Information Security Group in Switzerland. He received his B.S. degree in electrical engineering in 2001 and Ph.D. degree in computer engineering in 2013 from Bogazici University in Istanbul, Turkey. His research interests include Future Internet, 5G networks, information security, and information-centric networking. He has two patents (one in US, one in TR) and published more than 50 academic works. He has been involved in various European ITEA and CELTIC as well as national Innosuisse and TUBITAK (TR) research projects as senior researcher, project coordinator and academic consultant. He is a senior member of IEEE and a member of ACM.

Keven Gambold is the CEO of Unmanned Experts Inc. with significant and wide-ranging experience in manned aircraft and Medium Altitude Long Endurance (MALE) Remotely Piloted Aircraft Systems (RPAS) with over 3600 hours. Extensive pilot, instructor, leadership and top management positions fulfilling operational, training and test program roles on global aviation projects. Retired military officer and instructor pilot with exceptional track record of coordinating and leading major cutting-edge programs for both international and small-medium military and civilian enterprises. An award-winning instructor and combat-experienced pilot on multiple aircraft types, including unmanned. Dedicated, versatile manager with broad expertise in project leadership, budget management, human resources, technical innovation, and equipment trials and fielding. Well-versed in team building and highly proficient in fast moving, rapidly changing environments with significant time pressures. Self-motivated, diligent and process-focused

with excellent documentation skills. Extensive interaction with Federal, State and International RPAS policy making bodies and key personnel and exposure to nascent Counter-UAS technologies.

Sastry Kompella serves as the Chief Scientist of Nexcepta Inc., which is an R&D Company focused on developing secure and resilient communications, networking, and cybersecurity solutions for DoD, Federal and Commercial customers. In this capacity he provides technical supervision to a group of researchers engaged in driving creative solutions through innovation. Prior to this, he was the Section Head for the Wireless Networks Research Section (Code 5521) at the US Naval Research Laboratory in Washington, DC, where he was responsible for developing fundamental understanding of tactical and strategic communication networks.

VTC2024-Spring Technical Papers

Monday 24 June 2024

Monday, 24 June 2024 11:00 - 12:30 Heliconia 3402

1B: Recent Results I

1 A Robust Machine Learning Based UWB AOA Estimation Method

Wenmin Zeng, Harbin Institute of Tehnology, Shenzhen; Jialin Zhang, Harbin Institute of Technology, Shenzhen; Tingting Zhang, Harbin Institute of Technology (Shenzhen)

2 An Efficient Machine Learning-based Channel Prediction Technique for OFDM Sub-Bands

Pedro E. Gória Silva, National Institute of Telecommunications (INATEL); Jules M. Moualeu, University of the Witwatersrand; Pedro J. H. Nardelli, Lappeenranta University of Technology; Yonghui Li, University of Sydney; Rausley Adriano Amaral de Souza, National Institute of Telecommunications (Inatel)

3 Autonomous Vehicular Systems: Architectural Strategies for Adaptive Multi-Objective Configuration

Julian Demicoli, Technical University of Munich; Nicolai Palm, Ludwig Maximilian University Munich; Herbert Palm, Munich University of Applied Sciences; Oliver Kleikemper, Sebastian Steinhorst, Technical University of Munich

4 Blind Co-channel Interference Cancellation Using Fast Fourier Convolution

Mostafa Naseri, Eli de poorter, Ghent University; Ingrid Moerman, Imec - Gent University; H. Vincent Poor, Princeton Universtiy; Adnan Shahid, Ghent University

Monday, 24 June 2024 14:00 - 15:30 Heliconia 3504

2J: Recent Results II

1 Cognitive Beamforming Design for Dual-Function Radar-Communications

Tuan Le, Middlesex University London; Ivan Ku, Multimedia University; Xin-She Yang, Middlesex University; Christos Masouros, University College London; Tho Le-Ngoc, McGill University

2 Collaborative Vehicular Edge Computing Design for Delay-Sensitive Applications

Voon Jing Yang, National Taiwan University

3 Design Considerations and Framework Analysis for Software-Defined Autonomous Vehicles

Kratika Yadav, Swapnil Shinde, Indian Institute of Technology, Hyderabad

4 Efficient Modulation Recognition with Minimal Samples Leveraging Architecture Search and Knowledge Transfer in Combined Radar-Communication Environments

Xixi zhang, Gejiacheng Lu, Nanjing University of Posts and Telecommunications; Juzhen Wang, Wuhan University; Yu Wang, Nanjing University of Posts and Telecommunications; Yun Lin, Harbin Engineering University; Guan Gui, Nanjing University of Posts and Telecommunications

5 Experimental Analysis of DRL-based Edge Caching for the Internet of Things

Youcef Kardjadja, University of La Rochelle; Lucas Bréhon--Grataloup, Université de Toulouse; Rahim Kacimi, Université Toulouse III; André-Luc Beylot, University of Toulouse

Monday, 24 June 2024 14:00 - 15:30 Heliconia 3505

2K: Recent Results III

1 Peak Age of Collection in Coordinated Direct and Relay Transmission with Physical-Layer Network Coding

Guiyu Meng, The Education University of Hong Kong; Hai Liu, The Hang Seng University of Hong Kong; Tse-Tin Chan, The Education University of Hong Kong

2 Fully Autonomous Distributed Transmission Parameter Selection Method for Mobile IoT Applications Using Deep Reinforcement Learning

Seiya Sugiyama, The University of Electro-Communications; Keigo Makizoe, Maki Arai, Mikio Hasegawa, Tokyo University of Science; Tomoaki Ohtsuki, Keio University; Aohan Li, The University of Electro-Communications

3 Generalized Approximating Message Passing Based Channel Estimation for RIS-Aided THz Communications with Beam Split

Xin Su, Ruisi He, Peng Zhang, Bo Ai, Beijing Jiaotong University

4 Hier-FedMeta: A Hierarchical Federated Meta-Learning Framework for Personalized and Efficient IoV Systems

Yiming Chen, The University of Electro-Communications; Celimuge Wu, The University of Electro-Communications, Japan; Zhaoyang Du, The University of Electro-Communications; Yangfei Lin, University of Electro-Communications; Soufiene Djahel, Coventry University; Lei Zhong, Toyota Motor Corporation

5 Highly Accelerated Weighted MMSE Precoding Approach for FDD Systems with Incomplete CSI

Donia Ben Amor, Technical University of Munich; Michael Joham, Munich University of Technology; Wolfgang Utschick, Technische Univesitat Munchen

Monday, 24 June 2024 14:00 - 15:30 Heliconia 3506

2L: Recent Results IV

1 Inference-Aware Reconstruction for Short-Packet Transmission in Industrial Metaverse

Qinqin Xiong, Harbin Institute of Technology, Shenzhen; Xu Zhu, Harbin Institute of Technology (Shenzhen); Jie Cao, Harbin Institute of Technology, Shenzhen; Yufei Jiang, Harbin Institute of Technology (Shenzhen)

2 Insights into the performance of 5GOpen@TheBeacon: a flexible and scalable 5G testbed based on open-source solutions

João Francisco Nunes Pinheiro, Andreas Gavrielides, University of Antwerp - imec; Miguel Camelo, Antwerp; Johann Marquez-Barja, University of Antwerp - imec

3 Integration of Visible Light and Backscatter Communications for Ambient Internet of Things

Boxuan Xie, Alexis Dowhuszko, Kalle Koskinen, Lauri Mela, Jari Lietzén, Kalle Ruttik, Riku Jäntti, Jyri Hamalainen, Aalto University

4 Low-Complexity Detection Using Channel Dimensionality Reduction in 6G Uplink Systems

Rubeena Aafreen, Mohammed Zafar Ali Khan, Indian Institute of Technology Hyderabad

5 MIMO-OTSM: Low Complexity Channel Estimation and MRC Detection under High Mobility Scenarios

Sapta Girish, Asfani Mohammed, Chiranjeevi Damacharla, Bharat Electronics Limited

Monday, 24 June 2024 16:00 - 17:30 Heliconia 3504

3J: Recent Results V

1 Minimizing Power for Satellite Beamforming with Non-ideal Power Consumption Models

Chih-Chi Liou, Yan-Yin He, National Yang Ming Chiao Tung University; Shang-Ho Tsai, National Chiao Tung University; Jen-Ming Wu, Hon Hai Research Institute

2 Multimodal Retrieval Augmented Generation Evaluation Benchmark

Tienlan Sun, EduBeyond; Anaiy Somalwar, University of California, Berkeley; Hinson Chan, EduBeyond

3 On the Performance of Altruistic Infotaxis under Erroneous Communication Channel

Nada Abughanam, Tamer Khattab, Amr Mohamed, Qatar University

4 On the Performance of IRS-Assisted SSK and RPM over Rician Fading Channels

Harsh Raj, Indian Institute of Technology Guwahati; Ugrasen Singh, Aalto University, Helsinki; B. R. Manoj, Indian Institute of Technology Guwahati

5 Optimized Beamforming Design for PLS in Near-field Uplink Communications

João Ferreira, Universidade Nova de Lisboa; Daniel Dinis, Copelabs, Universidade Lusófona; João Guerreiro, FCT-Universidade Nova de Lisboa, Instituto de Telecomunicações; Rui Dinis, Universidade Nova de Lisboa

Monday, 24 June 2024 16:00 - 17:30 Heliconia 3505

3K: Recent Results VI

1 Mobile Molecular Communication with Relay Assisted Network Coding: Framework and Analysis

Arjav Praveen Jain, Prateek Mukherjee, Sandeep Joshi, Birla Institute of Technology and Science Pilani

2 Physical Layer Authentication Using Information Reconciliation

Atsu Kokuvi Angélo Passah, Rodrigo C. de Lamare, Pontifical Catholic University of Rio de Janeiro; Arsenia Chorti, University of Cergy-Pontoise

3 Power Transfer between Two Antenna Arrays in the Near Field

Krishan Kumar Tiwari, Giuseppe Caire, Technical University of Berlin

4 Power Transmission Line Component Detection using YOLOv7 on single-board computer platforms

Nico Surantha, Eiichi Yamashina, Yuto Sato, Toru Iwao, Tokyo City University

Monday, 24 June 2024 16:00 - 17:30 Heliconia 3506

3L: Recent Results VII

1 Task Offloading for MEC-V2X Assisted Autonomous Driving

Yilun Zhang, Changrun Chen, H. Zhu, Jiangzhou Wang, University of Kent

2 Two-Path Parallel Cancellation ZP-OTFS Systems for Mitigating Residual Carrier Frequency Offset

Henry Yeh, Cal State Long Beach; Hsiao-Hwa Chen, Chao-Yu Chen, National Cheng Kung University

3 Unleashing the Potential of Machine Learning and NLP Contextual Word Embedding for URL-Based Malicious Traffic Classification

Yayathi Pavan Kumar S, Sudeepta Mishra, Raushan Kumar Singh, IIT Ropar

4 V2I Blockage Modeling and Performance Evaluation for Connected Autonomous Vehicle

Chi Weiqi, Jin Nakazato, Manabu Tsukada, The University of Tokyo; Tomoki Murakami, NTT Corporation

5 WiFi Amplitude and Phase-based Respiratory Rate Monitoring

Yunpeng Ge, Ivan Wang-Hei Ho, The Hong Kong Polytechnic University

Tuesday 25 June 2024

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3402

4B: AI for UAVs

1 A Novel Semi-Supervised Learning Method Using Self-Adaptive Threshold for UAV Recognition

Gejiacheng Lu, Xue Fu, Nanjing University of Posts and Telecommunications; Juzhen Wang, Wuhan University; Hao Huang, Yu Wang, Nanjing University of Posts and Telecommunications; Yun Lin, Harbin Engineering University; Guan Gui, Nanjing University of Posts and Telecommunications

2 Augmentation Based on Spectrogram Segments for UAV Operating Channel-Robust CNN Classifiers

Tao Li, Xidian University; chaozheng Xue, xidian University; Yongzhao Li, Rui Zhang, Yuhuan Ruan, Xidian University; Dong Yang, xidian University

3 COMPASS: Communication-aware Trajectory Planning for UAV-based Rescue Missions via Non-Terrestrial Networks

Tim Gebauer, Florian Weißberg, Christian Wietfeld, TU Dortmund University

4 Efficient UAV Authentication Based on Multi-Resolution Analysis and Multi-Scale ResNet

Zhenxin Cai, Jin sha, Nanjing University; Yu Wang, Guan Gui, Nanjing University of Posts and Telecommunications

5 Graph Koopman Autoencoder for Predictive Covert Communication Against UAV Surveillance

Sivaram Krishnan, Jihong Park, Deakin University; Gregory Sherman, Benjamin Campbell, Defence Science and Technology Group; Jinho Choi, Deakin University

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3403

4C: Deep Learning

1 A Time-saving Task Scheduling Algorithm Based on Deep Reinforcement Learning for Edge Cloud Collaborative Computing

Wenhao Zou, Zongshuai Zhang, Institute of Computing Technology, Chinese Academy of Sciences, China; Nina Wang, ICT/CAS, China; Xiaochen Tan, University of Cambridge, United Kingdom (Great Britain); Lin Tian, Institute of Computing Technology, Chinese Academy of Sciences

2 Adjustable Multi-Objective Deep Reinforcement Learning-Based Edge User Allocation

Youcef Kardjadja, Yacine Ghamri-Doudane, University of La Rochelle; Mohamed Ibnkahla, Carleton University

3 Deep Learning-based EMI and IEMI Classification in 5G-R High-Speed Rail Wireless Communications

Yejing Fan, University of Leeds; Li Zhang, University of Leeds; Kang Li, University of Leeds

4 Deep learning-based Joint Transmit Beamforming for Integrated Sensing and Communication System

Ruming Yang, Zhiming Zhu, Jiexin Zhang, Shu Xu, Southeast University; Chunguo Li, Southeast University, Nanjing, China; Yongming Huang, Luxi Yang, Southeast University

5 Deep Reinforcement Learning based Contention Window Optimization for IEEE 802.11 bn

Rong Yan, Tsinghua University; Mingjun Du, Sun Yat-sen University, Guangzhou, China; Xiao-Ping Zhang, Yuhan Dong, Tsinghua University

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3404

4D: Localization

1 A Novel Geometric Solution for Moving Target Localization through Multistatic Sensing in the ISAC System

Shun Zhuge, NTU; Yugang Ma, Institute for Infocomm Research, A-STAR; Zhiping Lin, NTU; Yonghong Zeng, Institute for Infocomm Research

2 Bayesian Learning (BL)-based Extended Target localization in mmWave MIMO OFDM JRC Systems in the presence of Doppler and clutter

Priyanka Maity, Indian Institute of Technology, Kanpur; Suraj Srivastava, Indian Institute of Technology Jodhpur; Aditya K. Jagannatham, Indian Institute of Technology Kanpur

3 Deep Learning-Based Direct Localization for Virtual Large Antenna Array

Shang-Ling Shih, National Sun Yat-Sen University; Chao-Kai Wen, National Sun Yat-Sen University, Taiwan

4 Near-Field Localization with an Exact Propagation Model in Presence of Mutual Coupling

Zohreh Ebadi, Amir Masoud Molaei, Muhammad Ali Babar Abbasi, Simon L. Cotton, Queen's University Belfast; Anvar Tukmanov, BT Research and Innovation; Okan, Yurduseven

5 Multi-Sources Information Fusion Learning for Multi-Points NLOS Localization

Bohao Wang, Fenghao Zhu, Zhejiang University; Mengbing Liu, Nanyang Technological University; Chongwen Huang, Qianqian Yang, Zhejiang University; Ahmed Alhammedi, Technology Innovation Institute; Zhaoyang Zhang, Zhejiang University; M'erouane Debbah, KU 6G Research Center, Khalifa University of Science and Technology

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3405

4E: Satellite Communication I

1 Channel Estimation with OTFS Modulation for Random Access in LEO Satellite Communications

Zhonghui Jiang, Beijing University of Posts and Telecommunications; Huipeng Shi, The State Radio Monitoring Center Testing Center (SRTC); Yuming Zhang, Beijing University of Posts and Telecommunications; Kang Yan, The State Radio Monitoring Center Testing Center (SRTC); Yong Li, Beijing University of Posts and Telecommunications

2 Delay-Sensitive Coflow Routing for Time-Varying Topology in LEO Computing-Aware Networks

Shuang Yu, Shushi Gu, Harbin Institute of Technology (Shenzhen); zhikai zhang, Harbin Institute of Technology, Shenzhen; Zhang Qinyu, Harbin Institute of Tech.; Zihao Gao, Yulin Shi, China Academy of Space Technology; Wei Xiang, La Trobe University

3 Energy-Efficient Fast Data Retrieval Strategy Based on RS Coded Placement in LEO Constellation

Zhineng Wu, Shushi Gu, Harbin Institute of Technology (Shenzhen); zhikai zhang, Harbin Institute of Technology, Shenzhen; Zhang Qinyu, Harbin Institute of Tech.; Yifeng Jin, China Academy of Space Technology; Lei Zhang, Cast; Wei Xiang, La Trobe University

4 Federated Kalman Filter-Based Fusion of LEO and GNSS Positioning

Jun-Sheng Shi, Bo-Heng Yeh, Jen-Ming Wu, National Tsing Hua University; Ronald Y. Chang, Academia Sinica

5 Joint Allocation of Downlink Power, Bandwidth and Timeslots Based on Maximizing Energy Efficiency for GEO Satellite Communication Systems

Soniya Fufa Hika, Southeast University; Likun Zhu, China Mobile Group Design Institute Co; Tianxiang Ji, China Mobile Group Design Institute Company Ltd.; Haoyu Du, Chen Ming, Jiangtao Liu, Shihan Jin, Southeast University

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3406

4F: Performance in Transmission/Reception

1 Performance Analysis of Data-Carrying Reference Signal in Time-Varying Channels

Taiki Kato, Yokohama National University; Dr. Hiroki Iimori, Dr. Chandan Pradhan, Szabolcs Malomsoky, Ericsson Research; Dr. Naoki Ishikawa, Yokohama National University

2 Performance Analysis of RIS-aided MISO Systems with EMI and Channel Aging

Taoyu Song, Enyu Shi, Yu Lu, Yiyang Zhu, Jiayi Zhang, Bo Ai, Beijing Jiaotong University

3 Performance Evaluation in presence of Beam Misalignment for Millimeter-Wave Full-Duplex Two-Way Relay Systems

Soumyasree Bera, Indian institute of technology, kharagpur; Debarati Sen, Amit Kumar Dutta, Indian Institute of Technology Kharagpur

4 Superdirectivity-Based Electromagnetic Hybrid Beamforming for Holographic Communications

Ran Ji, Chongwen Huang, Zhejiang University; Xiaoming Chen, Xi'an Jiaotong University; Wei E. I. Sha, Zhejiang University; Linglong Dai, Tsinghua University; Jiguang He, TII; Zhaoyang Zhang, Zhejiang University; Chau Yuen, Nanyang Technological University; M'erouane Debbah, Khalifa University of Science and Technology

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3501 B

4G: Radio Access

1 A Hierarchical Learning Approach for Capacity Enhancement via Access Mode Selection in Wireless Powered Networks

Che Chen, Songhan Zhao, Shimin Gong, Bo Gu, Sun Yat-sen University; Wenjie Zhang, Minnan Normal University; Dusit Niyato, Nanyang Technological University

2 Age of Collection with Network-Coded Multiple Access: An Experimental Study

Yurong Lai, Shenzhen University; Hai Liu, The Hang Seng University of Hong Kong; Tse-Tin Chan, The Education University of Hong Kong; Haoyuan Pan, Changkun Jiang, Shenzhen University

3 Architecture Implementation and Feasibility Study on Blockchain-based Wireless Access Sharing

Takeru Fukushima, Motoharu Sasaki, Toshiro Nakahira, Daisuke Murayama, Tomoaki Ogawa, Yasushi Takatori, NTT Corporation

4 RACH-less Handover with Early Timing Advance Acquisition for Outage Reduction

Subhyal Bin Iqbal, Nokia Solutions and Networks, Munich, Technische Universität Dresden; Umur Karabulut, Ahmad Awada, Nokia Bell Labs; Philipp Schulz, Gerhard Fettweis, Technische Universität Dresden



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Regional Supporter



Exhibitor

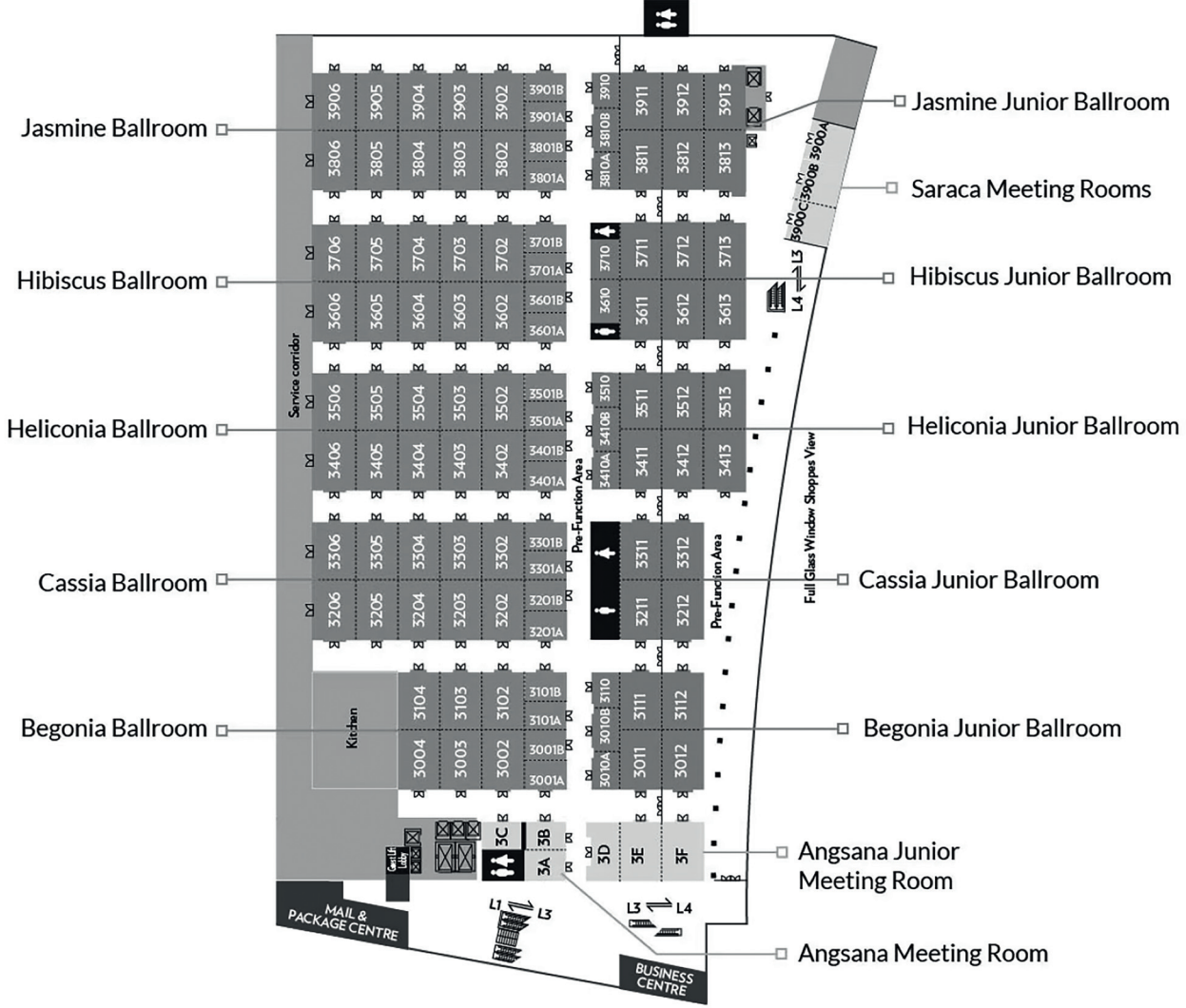


ROHDE & SCHWARZ

Exhibitor



Exhibitor



Heliconia Junior Ballroom (A)	Heliconia 3402 (B)	Heliconia 3403 (C)	Heliconia 3404 (D)	Heliconia 3405 (E)	Heliconia 3406 (F)	Heliconia 3501 B (G)	Heliconia 3502 (H)	Heliconia 3503 (I)	Heliconia 3504 (J)	Heliconia 3505 (K)	Heliconia 3506 (L)	
MONDAY 24 June												
8:00-17:30	Registration (Heliconia Hallway)											
9:00-17:30	Tutorials, Workshops and Recent Results Papers (sessions 1-3)											
18:00-20:00	VTC 2024-Spring Opening Reception (Heliconia Junior Ballroom)											
TUESDAY 25 June												
7:30-17:30	Registration (Heliconia Hallway)											
8:30-9:00	Welcome: General Co-chairs, TPC Co-chairs and VTS President (Heliconia Junior Ballroom)											
9:00-10:30	Keynotes: Michalis Matthaiou, Queen's University Belfast & Xianbin Wang, Western University (Heliconia Junior Ballroom)											
10:30-11:00	Refreshments (Bayview Foyer)											
11:00-12:30 (4)	Panel: Embracing Equity: Advancing Women in the Workplace	AI for UAVs	Deep Learning	Localization	Satellite Communication I	Performance in Transmission/Reception	Radio Access	Vehicular Networks I	Beamforming	Energy Efficiency	IoT	
12:30-14:00	Lunch (Heliconia Junior Ballroom)											
14:00-15:30 (5)	Resource Allocation	AI Resource Management	Federated Learning I	Massive MIMO	Satellite Communication II	Performance in Wireless Networks	RF Design	Vehicular Networks II	Beamforming and Tracking	Energy Efficient Networks	IoT/loV/M2M Applications	
15:30-16:00	Refreshments (Bayview Foyer)											
16:00-17:30 (6)	Resource Allocation for Greater Security	AI-enhanced Communication I	Federated Learning II	Millimeter Wave Systems	Satellite Communication III	Wireless Network Security	RIS	Vehicular Communications	Channel Measurement	Energy Management	IoT/loV/M2M Communications	
WEDNESDAY 26 June												
8:00-17:30	Registration (Heliconia Hallway)											
9:00-10:30	Keynotes: Yan Chen, Huawei & Nicolas Gresset, Mitsubishi Electric R&D Centre Europe (Heliconia Junior Ballroom)											
10:30-11:00	Refreshments (Bayview Foyer)											
11:00-12:30 (7)	Industry Panel	AI-enhanced Communication II	Federated Learning III	MIMO Systems I	Transmission and Reception I	Wireless Networks I	RIS/IRS	Vehicular Electronics / Robot Control	Channel Modeling	Energy Management for Vehicles	IRS	
12:30-14:00	Lunch (Heliconia Junior Ballroom)											
14:00-15:30 (8)	Edge Computing	AI-enhanced Networks I	Learning Techniques for Vehicles	MIMO Systems II	Transmission and Reception II	Wireless Networks II	Radio Performance and Resource Allocation	Vehicular Safety	Codebook Systems / Antennas	Adhoc and Sensor Networks I	OFDM/OFDMA	
15:30-16:00	Refreshments (Bayview Foyer)											
16:00-20:00	VTC2024-Spring Evening Event (Universal Studios)											
THURSDAY 27 June												
8:00-17:30	Registration (Heliconia Hallway)											
9:00-10:30	Keynotes: Hikmet Sari, Nanjing University of Posts and Telecommunications & Rui Zhang, The Chinese University of Hong Kong, Shenzhen and National University of Singapore (Heliconia Junior Ballroom)											
10:30-11:00	Refreshments (Bayview Foyer)											
11:00-12:30 (9)	Industry Panel: Standards for Advanced Air Mobility	AI-enhanced Networks II	Learning Techniques in Communications I	MIMO Systems III	Transmission and Reception III	Wireless Protocols	UAV Communication	Automated Vehicles	Coding I	Adhoc and Sensor Networks II	OTFS	Advanced Applications
12:30-14:00	Lunch (Heliconia Junior Ballroom)											
14:00-15:30 (10)	Sensing and Detection	Antenna Design	Learning Techniques in Communications II	MIMO Systems IV	Transmission and Reception IV	Wireless Sensing	UAV Networks I	Intelligent Transportation I	Coding II	Heterogeneous Networks I	Power Constrained Communication	Advances in Communications
15:30-16:00	Refreshments (Bayview Foyer)											
16:00-17:30 (11)	Spectrum Management	Emerging Technologies in Communication	Learning Techniques in Communications III	NOMA	Navigation	Semantic Communications	UAV Networks II	Intelligent Transportation II	Communications in Specialized Environments	Heterogeneous Networks II	Privacy and Security	Positioning

5 Wake-Up Signal Multiplexing With Non-Coherently Detected Waveforms

Fredrik Berggren, Alberto Perotti, Branislav Popovic, Huawei Technologies Sweden AB

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3502

4H: Vehicular Networks I

1 A Path-Backtracking-based Trust Management Scheme for VANETs

Cheong Chak Lam, Yujie Song, Yu'ang Zhang, Yue Cao, Wuhan University; Bruce Leow, University Teknologi Malaysia; Xinyuan Wang, Zhejiang Scientific Research Institute of Transport

2 Collaborative Sensing-Assisted Task Offloading and Resource Allocation for ISAC-Based Vehicular Clouds

Junzhe Lin, Zhang Liu, Ning Chen, Yifeng Zhao, Lianfen Huang, Xiamen University

3 Computation Offloading for Multi-server Multi-access Edge Vehicular Networks: A DDQN-based Method

Siyu Wang, Bo Yang, Zhiwen Yu, Northwestern Polytechnical University; Xuelin Cao, Xidian University; Yan Zhang, University of Oslo; Chau Yuen, Nanyang Technological University

4 On the Adaptive Secure Coded Caching Scheme in Vehicle Networks

Ziping Huang, Lei Zheng, Guangzhou University; Yong Liu, South China Normal University; Juanjuan Ren, Guangzhou University; Qingchun Chen, School of Mechanical and Electric Engineering Guangzhou University

5 Price-Based Task Offloading for Load-Imbalance Vehicular Multi-Access Edge Computing

Jindou Xie, Dalian Maritime University; Fenghao Zheng, Chongqing University; Wanli Wen, Chongqing University; Yunjian Jia, Chongqing University

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3503

4I: Beamforming

1 Beamforming Design for IRS-assisted High-mobility ISAC Systems

Xingyu Peng, Zhejiang University; Qin Tao, Hangzhou Normal University; Xiaoling Hu, BUPT; Chongwen Huang, Xiaoming Chen, Zhejiang University

2 Improved Hybrid-Beamforming Design for Full-Duplex mmWave Point-to-Point Communication

Tsung-Ting Tsai, Jiun-Hung Yu, Yu T. Su, National Yang Ming Chiao Tung University

3 Minimum-Delay Beam Scheduling Leveraging Reflections for Switched Beamforming Systems

Chao Chen, Haojun Xu, Zhejiang Gongshang University; Rui Yin, Zhejiang University City College; Xiaohan Yu, Bo Ma, Chuanhuang Li, Zhejiang Gongshang University

Tuesday, 25 June 2024 14:00 - 15:30 Heliconia Junior Ballroom

5A: Resource Allocation

1 Matching Game Based Resource Allocation Scheme for Adaptive Semantic and Bit Communication Networks

Peixuan Li, Yichen Wang, Moqi Liu, Xi'an Jiaotong University; Haotian Liu, Xi'an Jiaotong University

2 Online Resource Allocation for Large-scale Deterministic Networks with Historical Data

Weiqian Tan, Southeast University; Binwei Wu, University of Electronic Science and Technology of China; Shuo Wang, Purple Mountain Laboratories; Tao Huang, Beijing University of Posts and Telecommunication

3 Optimized Age of Information for Relay Systems with Resource Allocation

Yichao Zhang, Yufei Jiang, Harbin Institute of Technology, Shenzhen; Xu Zhu, Harbin Institute of Technology (Shenzhen); Jie Cao, Harbin Institute of Technology, Shenzhen; Sumei Sun, Institute for Infocomm Research

4 Odometry-Aided mmWave Communications using Overparameterized Beamforming Optimization

Gary Lee, Ernest Kurniawan, Institute for Infocomm Research; Yuanjin Zheng, Nanyang Technological University

5 Robust Hybrid Beamforming Design for mmWave Massive MIMO Systems with Imperfect CSI

Fangyong Peng, Yan Yang, Beijing Jiaotong University

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3504

4J: Energy Efficiency

1 Energy Efficient Aerial RIS: Phase Shift Optimization and Trajectory Design

Hajar El Hammouti, Adnane Saoud, UM6P; Asmae Ennahkami, CentraleSupélec; ElHoucine Bergou, Mohammed VI Polytechnic University

2 Energy-aware Age of Information (AoI) Minimization for Internet of Things in NOMA-based LEO Satellite Networks

Chih-Yu Lin, Wanjiun Liao, National Taiwan University

3 Energy-Efficient Hybrid Beamforming for Integrated Sensing and Communication Enabled mmWave MIMO Systems

Jitendra Singh, Indian Institute of Technology Kanpur; Suraj Srivastava, Indian Institute of Technology Jodhpur; Aditya K. Jagannatham, Indian Institute of Technology Kanpur

5 Energy-efficient Integrated Sensing and Communication System and DNLFM Waveform

Yihua Ma, Zhifeng Yuan, Shuqiang Xia, Chen Bai, Zhongbin Wang, Yuxin Wang, ZTE Corporation

Tuesday, 25 June 2024 11:00 - 12:30 Heliconia 3505

4K: IoT

1 An AI-as-a-Service Platform for an Artificial Intelligence of Things (AIoT)

Ali Nadar, Jérôme Härri, EURECOM

2 Dual Perigee: Reducing Latency in IoT Blockchain Through Efficient Peer Selection

Koki Koshikawa, Chiba University; Jong-Deok Kim, Won-Joo Hwang, Pusan National University; Kien Nguyen, Hiroo Sekiya, Chiba University

3 IoT Cloud RAN Testbed for Ultra-Precise TDoA-based Localization in LPWANs

Thomas Maul, Joerg Robert, Technische Universität Ilmenau; Sebastian Klob, Friedrich-Alexander Universität Erlangen-Nürnberg

4 Performance Evaluation and Low-Complexity Detection of the PHY Modulation of LR-FHSS Transmission in IoT Networks

Alireza Maleki, Ebrahim Bedeer, University of Saskatchewan; Robert Barton, Cisco Systems Inc.

4 Resource Allocation Strategy in AUV-Assisted Edge Computing UWSN with Hybrid Acoustic and MI Communication

Tengteng Li, Yisheng Zhao, Zhiyi Hu, Chaohua Song, Peng Liu, Fuzhou University

5 Toward a Resource-Efficient Service Function Chain Mapping Mechanism : A Heuristic method

Dongshuai Niu, Guangwen Yi, Zhenzhou Tang, Wenzhou University

Tuesday, 25 June 2024 14:00 - 15:30 Heliconia 3402

5B: AI Resource Management

1 Adaptive Communication Resource Allocation for Federated Learning with UEP Strategies

Muhang Lan, University of Science and Technology of China; Song Xiao, Xidian University; Wenyi Zhang, University of Science and Technology of China

2 Deep Reinforcement Learning Based Dynamic Resource Slicing for eMBB and URLLC Traffic Considering Puncturing
Zhang Wenqi, Pan Zhiwen, Liu Nan, Xiaohu You, Southeast University

3 Enhanced Resource Allocation in Vehicular Networks via Multi-Agent Reinforcement Learning
Yu Zhang, Shufei Wang, Minyu Hua, Yibin Zhang, Nanjing University of Posts and Telecommunications; Tomoaki Ohtsuki, Keio University; Hikmet Sari, Guan Gui, Nanjing University of Posts and Telecommunications

4 Federated Reinforcement Learning for Resource Allocation in V2X Networks
Kaidi Cu, Shenglong Zhou, Imperial College London; Geoffrey Ye Li, Imperial College

5 Prediction of Resource Status in Medium Access Control for Vehicular Networks
Yafeng Deng, Young-June Choi, Ajou University

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5C: Federated Learning I

1 Communication-Learning Co-Design for Over-the-Air Federated Distillation
Zihao Hu, The Chinese University of Hong Kong; Jia Yan, The Hong Kong University of Science and Technology (Guangzhou); Yingjun Zhang, Chinese University of Hong Kong; Jun Zhang, Khaled B. Letaief, Hong Kong University of Science and Technology

2 Federated Multi-Agent Reinforcement Learning for Heterogeneous Action Spaces
Sheng Shen, Teng Joon Lim, University of Sydney

3 Hierarchical Federated Learning with Edge Optimization in Constrained Networks
Xiaoyang Zhang, Chen-Khong Tham, Wang Wenyi, National University of Singapore

4 Joint Client Selection and Bandwidth Allocation Algorithm for Time-sensitive Federated Learning over Wireless Networks
Yu Tian, Institute of Computing Technology, Chinese Academy of Science; Nina Wang, ICT/CAS, China; Zongshuai Zhang, Wenhao Zou, Institute of Computing Technology, Chinese Academy of Sciences, China; Guoxue Zou, University of Chinese Academy of Sciences; Lin Tian, Institute of Computing Technology, Chinese Academy of Sciences

5 Privacy Preserving Energy-Aware Federated Learning Based Method for Energy Theft Detection
Zunaira Nadeem, Queen Mary University, London; Mona Jaber, Queen Mary University of London

Tuesday, 25 June 2024 14:00 - 15:30 Heliconia 3404

5D: Massive MIMO

1 A Low-Cost Receiver in Cell-Free Massive MIMO Systems with the Aid of Distributed Learning
Tianyu Chen, Nanjing University Of Posts And Telecommunications; Qi Zhang, NUPT; Jun Zhang, Nanjing University of Posts and Telecommunications

2 Cell-free Massive MIMO with Indoor/Outdoor Users: Problem Exposed and a Solution
Felip Riera-Palou, Guillem Femenias, University of the Balearic Islands

3 Gridless Channel Estimation for THz Ultra-Massive MIMO-OFDM Systems under Dual Wideband Effects
Soujanya Thallapalli, Debarati Sen, Indian Institute of Technology Kharagpur

4 Sensing Assisted Channel Extrapolation for TDD Massive MIMO-OFDM Systems
Yongbo Xiao, Zhejiang University; An Liu, College of ISEE, Zhejiang University

5 Subspace-based Semi-Blind Channel Estimation for User-Centric Cell-Free Massive MIMO Systems
Bowen Zhong, University of Liverpool; Xu Zhu, Harbin Institute of Technology (Shenzhen); Eng Gee Lim, Xi'an Jiaotong-Liverpool University

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5E: Satellite Communication II

1 Joint Detection and Decoding for Helicopter Satellite Communication System With LDPC Codes
Wei Bao, Jiangtao Wang, Xidian University; Yongchao Wang, University of Xidian

2 Joint On-Ground and On-Board Beamforming for Multi-Gateway Multibeam Satellites: Two-Timescale Approach
Tantao Gong, Southeast University; Tianyang Cao, Jing Wang, China Mobile Group Design Institute Co; Zhiyang, Li; Chen Ming, Southeast University

3 Optimizing Satellite Network Infrastructure: A Joint Approach to Gateway Placement and Routing
Yuma Abe, National Institute of Information and Communications Technology (NICT); Flor Ortiz, University of Luxembourg; Eva Lagunas, SnT, University of Luxembourg; Victor Monzon Baeza, University of Luxembourg; Symeon Chatzinotas, SnT, University of Luxembourg; Hiroyuki Tsuji, National Institute of Information and Communications Technology; NICT

4 Performance Analysis for Soft Satellite Switching in LEO Satellite Communication System
Chun-Tai Liu, Jen-Yi Pan, National Chung Cheng University; Shou-Hong Liou, Industrial Technology Research Institute

5 SDDRL-SR: A High-Reliability Satellite Routing Algorithm based on Deep Reinforcement Learning
Ding Zhaolong, ShanghaiTech university; Liu Huijie, Tian Feng, Yang Zijian, Innovation Academy for Microsatellites of CAS

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5F: Performance in Wireless Networks

1 Minimizing Clearing Time in mmWave Networks with Overlapping Coverage
Thanh Tung Vu, Swaroop Gopalam, Stephen V. Hanly, Iain B. Collings, Hazer Inaltekin, Macquarie University

2 Objective QoE Prediction for Video Streaming Services: A Novel Full-Reference Methodology
Adrian Perez Aguilar, University of Malaga; Mattia Lecci, Keysight Technologies, Inc.; Almudena Díaz Zayas, Universidad de Málaga; Hua Wang, Keysight Technologies

3 Performance Evaluation of 5G Standalone Seamless Home Routed Roaming for Connected Mobility in Cross-border Scenarios
Francisco Vázquez-Gallego, Jad Nasreddine, Marc Codina, Bruno Cordero, Estela Carmona-Cejudo, Martin Trullenque, Daniel Camps-Mur, Yuri Murillo, i2CAT Foundation; Philippe Seguret, Valeo Telematik und Akustik GmbH; Javier Polo, José López Luque, Cellnex Telecom S.A.

4 Performance Evaluation of Contention-based Random Access Procedure in Non-Terrestrial Network
Yen-Ting Lin, National Taiwan University of Science and Technology (NTUST); Ray-Guang Cheng, National Taiwan University Science and Technology (NTUST)

5 Real-Time Scene-Sensitive Anomaly Detection of 5G Control Plane Based on Markov Chain
Lulu Dai, Institute of Computing Technology, Chinese Academy of Sciences; Qian Sun, Chinese Academy of Sciences; Lin Tian, Institute of Computing Technology, Chinese Academy of Sciences

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5G: RF Design

1 A Geometry-Based RIS-Assisted Multi-User Channel Model with Deep Reinforcement Learning
Yuan Yuan, Ruisi He, Bo Ai, Beijing Jiaotong University; Tong Wu, National Institute of Metrology of China; Ruifeng Chen, Zhengyu Zhang, Yunwei Jin, Zhangdui Zhong, Beijing Jiaotong University

2 A Novel Deep Learning Based Time-Varying Multipath Component Tracking Algorithm
Haoyu Wang, Zhi Sun, Tsinghua University

3 Analytical Performance Bounds for Radio Map Estimation
Daniel Romero, Tien Ngoc Ha, Raju Shrestha, University of Agder; Massimo Franceschetti, UC San Diego

4 Flexible Beam Pattern Synthesis Method Based on Subarray for Satellite Communications
Bingliang Liu, Xidian University; Kaiqiang Qi, Xuan Feng, Institute of Telecommunication and Navigation Satellites; Yongjun Liu, Rui Chen, Xidian University

Tuesday, 25 June 2024 14:00 - 15:30 Heliconia 3502

5H: Vehicular Networks II

1 Access Mechanisms in Air-to-Ground Wireless Networks with Phased Array Antennas
Chenguang Zhu, Huan Lin, Lianghai Ding, Shanghai Jiao Tong University

2 Adaptive Broadcast Scheduling Scheme for High-definition Map Tile Dissemination in Vehicular Networks
Madhuri Annavazzala, Supriya Dilip Tambe, Antony Franklin, Bheemarjuna Reddy Tamma, Indian Institute of Technology Hyderabad

3 Coordinated Nullforming with Limited Control Parameters for Spectrum Sharing Between High-Altitude Platforms and Terrestrial Networks
Tsutomu Ishikawa, Koji Tashiro, Kenji Hoshino, Atsushi Nagate, SoftBank Corp.

4 Enhancing Production Planning in the Internet of Vehicles: A Transformer-based Federated Reinforcement Learning Approach
Jinhua Chen, Hosei University, Japan; Zihan Zhao, Keping Yu, Hosei University; Shahid Mumtaz, Institute of Telecommunications; Joel Rodrigues, National Institute of Telecommunications (Inatel); Mohsen Guizani, Qatar University; Takuro Sato, Waseda University

5 Enhancing Uplink Scheduling in 5G Enabled Vehicular Networks: A Cross-Layer Approach with Predictive Buffer Status Reporting
Veerendra Kumar Gautam, Indian Institute of Technology Hyderabad; Venkatarami Reddy Chintapalli, National Institute of Technology Calicut, Calicut, India; Bheemarjuna Reddy Tamma, Indian Institute of Technology Hyderabad; Siva Ram Murthy Chebiyyam, Indian Institute of Technology Madras

Tuesday, 25 June 2024 14:00 - 15:30 Heliconia 3503

5I: Beamforming and Tracking

1 Beamforming Designs for BER Minimization in LEO Satellite Communications with NOMA
Chia-Hsin Yu, Yan-Yin He, National Yang Ming Chiao Tung University; Shang-Ho Tsai, National Chiao Tung University; Jen-Ming Wu, Hon Hai Research Institute

2 Differential Modulation and Beamforming for Finite Blocklength URLLC with mmWave massive MIMO
Canjian Zheng, Harbin Institute of Technology (Shenzhen); Fu-Chun Zheng, Harbin Institute of Technology (Shenzhen) & The University of York; Jingjing Luo, Harbin Institute of Technology (Shenzhen)

3 Fast Beam Scanning and Tracking based on Frequency-gradient Array Antennas
Hojae Lee, Sangrim Lee, Jayeong Kim, Byungkyu Ahn, Soonhee Kwon, LG Electronics

4 Joint Radar-Communication Beamforming for CRB-based Target Localization
Tianhao Mao, Jie Yang, Le Liang, Southeast University; Shi Jin, Southern University

5 Vision-aided Multi-user Beam Tracking for mmWave Massive MIMO System: Prototyping and Experimental Results

Kehui Li, Binggui Zhou, University of Macau; Jiajia Guo, Southeast University; Xi Yang, East China Normal University; Qing Xue, Chongqing University of Posts and Telecommunications; Feifei Gao, Tsinghua University; Professor Shaodan Ma, University of Macau

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5J: Energy Efficient Networks

1 Decentralized and Interference-Constrained Power Allocation for SU in DSA

Yousi Lin, Xiamen University of Technology; Peiwen Qiu, The Ohio State University; Yaling Yang, Virginia Tech

2 Energy-Efficient Resource Management for Multi-UAV NOMA Networks Based on Deep Reinforcement Learning
Xiangda Lin, Helin Yang, Kailong Lin, Liang Xiao, Xiamen University; Zhaoyuan Shi, Anqing Normal University; Wanting Yang, Zehui Xiong, Singapore University of Technology and Design

3 Energy-Efficient Topological Dependency and Data-Aware Splittable Task Offloading in Mobile Edge Networks

Guoxue Zou, University of Chinese Academy of Sciences; Nina Wang, ICT/CAS, China; Zongshuai Zhang, Institute of Computing Technology, Chinese Academy of Sciences, China; Yu Tian, Institute of Computing Technology, Chinese Academy of Science; Wenhao Zou, Institute of Computing Technology, Chinese Academy of Sciences, China; Lin Tian, Institute of Computing Technology, Chinese Academy of Sciences; ShaoBin Fan, China United Network Communications Group Company Limited

4 Towards Energy Efficient Federated Meta-learning in Edge Network

Xubo Li, Yuanjie Jia, Huazhong University of Science and Technology; Yingyu Li, China University of Geosciences; Yong Xiao, Huazhong University of Science and Technology

5 Towards Net-Zero Carbon Emissions in Federated Edge Intelligence

Haohui Cai, Yong Xiao, Huazhong University of Science and Technology; Yingyu Li, China University of Geosciences; Yuyie Zhou, Huazhong University of Science and Technology; Dusit Niyato, Nanyang Technological University; Sumei Sun, Institute for Infocomm Research

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5K: IoT/IoV/M2M Applications

1 A Novel BLE Extended Advertising Based Industrial Automation Framework with Modbus Protocol
Sukriti Gautam, Indian Institute of Technology (IIT) Ropar; Suman Kumar, IIT Ropar

2 Grid LSTM based Attention Modelling for Traffic Flow Prediction

Rahul Biju, International Institute of Information Technology, Hyderabad; Usha Goparaju, IIITH; Deepak Gangadharan, International Institute of Information Technology, Hyderabad; Bappaditya Mandal, Keele University, United Kingdom

3 Hypersphere Projection-Guided Radio Frequency Fingerprinting Authentication in the Open World

Xue Fu, Yu Wang, Nanjing University of Posts and Telecommunications; Yun Lin, Harbin Engineering University; Qianyun Zhang, Beihang University; Guan Gui, Nanjing University of Posts and Telecommunications; Tomoaki Ohtsuki, Keio University; Hikmet Sari, Nanjing University of Posts and Telecommunications

4 MI-Based Cross-Medium Communication for Multi-AUV-Assisted Underwater Data Acquisition

Peng Liu, Yisheng Zhao, Zhiyi Hu, Chaochao Song, Tengpeng Li, Fuzhou University

5 RTOS based Data Logger using BLE Periodic Advertising for Cold Chain Temperature Monitoring

Sukriti Gautam, Indian Institute of Technology (IIT) Ropar; Suman Kumar, IIT Ropar

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6A: Resource Allocation for Greater Security

1 Federated Multi-Agent Deep Reinforcement Learning Approach for Resource Allocation in Platoon-Based NR-V2X

Yiming Liu, Beijing University of Posts and Telecommunications

2 Integrated Computation Offloading, UAV Trajectory Control, and Resource Allocation against Jamming in SAGIN

Minh Dat Nguyen, Université du Québec à Montréal (UQAM); Wessam Ajib, University of Quebec at Montreal; Wei-Ping Zhu, Concordia University; Gunes Karabulut Kurt, Polytechnique de Montreal, Canada

3 On the Impact of Age of Channel Information on Secure RIS-assisted mmWave Networks

Syed Waqas Haider Shah, IMDEA Networks Institute, Madrid, Spain; Marwa Qaraqe, Hamad Bin Khalifa University; Saud Althunibat, Texas A&M University at Qatar; Joerg Widmer, Imdea

4 RIS-Aided Polarization Aware Optimal WPT

Srishti Sharma, IIT Delhi; Swades De, Indian Institute of Technology Delhi

5 Secrecy Performance of a Cooperative Network with Battery-Assisted Energy Harvesting Nodes

Amit Patel, Shankar Prakriya, Indian Institute of Technology, Delhi

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6B: AI-enhanced Communication I

1 A DDPG-Based Procedure for Mitigating Pilot Contamination in Massive MIMO RSMA Systems

Felipe Augusto Dutra Bueno, McMaster University; Jose Carlos Marinello, UTFPR - Brazil; Telex M. N. Ngatched, McMaster University

2 Channel Tracking with Minimal Overhead for Wideband MIMO Mobile Communication Systems

Siting Lv, Xiaohui Li, Xingbo Chen, Jiawen Liu, Mingli Shi, Xidian University

3 Dynamic Batching and Early-exiting for Accurate and Timely Edge Inference

Yechao She, Tuo Shi, City University of Hong Kong; Jianping Wang, City University of Hong Kong, Hong Kong; Bin Liu, Tsinghua University

4 Enhanced Semi-Supervised Radar Emitter Identification via Virtual Adversarial Training

Hong Wan, Nanjing University of Posts and Telecommunications; Qianyun Zhang, Beihang University; Yu Wang, Xue Fu, Nanjing University of Posts and Telecommunications; Yun Lin, Harbin Engineering University; Fumiyouki Adachi, Tohoku University; Guan Gui, Nanjing University of Posts and Telecommunications

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6C: Federated Learning II

1 AL-powered EdgeFL: Achieving Low Latency and High Accuracy in Federated Learning

Hung-Chin Jang, National Chengchi University; Hao-Po Chang, Dept. of Computer Science, National Chengchi University

2 Communication-Efficient Decentralized Federated Learning via One-Bit Compressive Sensing

Shenglong Zhou, Kaidi Cu, Imperial College London; Geoffrey Ye Li, Imperial College

3 Fast Wireless Federated Learning with Adaptive Synchronous Degree Control

Zhixiong Chen, Queen Mary University of London; Wenqiang Yi, University of Essex; Hyundong Shin, Kyung Hee University; Arumugam Nallanathan, Queen Mary University of London

4 Federated Deep Reinforcement Learning-enabled Task Offloading in Cloud-Edge-Terminal Collaborative Networks

Fanqi Yu, Bixia Tu, Yunfeng Wang, Huixian Gu, Yinxin Li, Miaoyu Lin, Xidian University; Haoyang Ding, University of Xidian; Guorong Zhou, Liqiang Zhao, Xidian University

5 Federated Generative Learning for Digital Twin Network Modeling

Dongzi Jin, Huazhong University of Science and Technology; Yingyu Li, China University of Geosciences; Yong Xiao, Huazhong University of Science and Technology

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6D: Millimeter Wave Systems

1 Design and Analysis of Super-Compact Millimeter Wave Antenna for 5G Vehicular Networks

Mehr E Munir, Prince Sultan University; Moustafa M. Nasralla, Maged Abdullah Esmail, Prince Sultan University, Riyadh, Saudi Arabia.

2 Millimeter Wave and Sub-THz Channel Measurements, Models, and Comparisons in Indoor Industrial Environment

Wang Yang, Chenxu Wang, Xi Liao, Chongqing University of Posts and Telecommunications; Yi Chen, Ziming Yu, Wang Guangjian, Huawei Technologies

3 Millimeter Wave Radio Propagation Measurements and Channel Characterization in Indoor Factory Environments for ISAC

Wang Yang, Tianxiang Wang, Chongqing University of Posts and Telecommunications; Xiangquan Zheng, Institute of Systems Engineering, Academy of Military Science of PLA; Xi Liao, Chongqing University of Post and Telecommunications; Jie Zhang, University of Sheffield

4 Millimeter-Wave V2V Channel Characteristics in Underground and Open Parking Lots

Xichen Liu, Lin Yang, Guangrong Yue, Yutong Jiang, Dingrui Ke, Shuning Liu, Wangyang Zhou, University of Electronic Science and Technology of China

5 Wireless Multipath Component Estimation for Millimeter-Wave Beam-Scanning Systems

Nigus Yirga shimuye, François Quitin, Université Libre de Bruxelles; Claude Oestges, Université catholique de Louvain

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6E: Satellite Communication III

1 Calculating the Dynamic Parameter of the Maseng-Bakken Model for Earth-LEO Links

Ruizhan Shen, David Michelson, The University of British Columbia

2 Multigateway Robust Precoding for Multibeam Satellite Systems With Feeder Link Interference

Qing Su, Rui Chen, Xidian University; Xuan Feng, Institute of Telecommunication and Navigation Satellites

3 Transmit Power Aware Proportional Fair Scheduling Algorithm in LEO Satellite Communication System

Chun-Tai Liu, Jen-Yi Pan, National Chung Cheng University

4 User-Level Dynamic Beam Hopping Design for LEO Satellite Networks Based on Deep Reinforcement Learning Assisted Enhanced Genetic Algorithm

Haotian Liu, Yichen Wang, Tao Wang, Peixuan Li, Xi'an Jiaotong University

5 Where Is My Route? Enabling Source Routing in LEO Satellite Networks

Vemuganti Sesha Satvik, Anand M. Baswade, Indian Institute of Technology, Bhilai

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6F: Wireless Network Security

1 Leveraging Group Secret Sharing Technology for FD-RAN: A Lightweight AKA Mechanism

WangNing, Southeast University; Jiacheng Chen, Peng Cheng Laboratory; Jianbing Ni, Queen's University; Liquan Chen, Southeast University; Haibo Zhou, Nanjing University

2 Privacy-Preserving Resource Allocation for Asynchronous Federated Learning

Xiaoqing Chen, Zheer Zhou, Shanghai University; Wei Ni, CSIRO; Guangjin Pan, Shanghai University; Xin Wang, Fudan University; Shunqing Zhang, Yanzan Sun, Shanghai University

- 3 Reinforcement Learning Based Jamming Detection for Reliable Wireless Communications**
Chen Wang, Yifan Chen, Zhiping Lin, Qiaoxin Chen, Liang Xiao, Xiamen University
- 4 Secure Communication Based on Reconfigurable Intelligent Surface in Satellite Communications with Similar Channels**
Chengjun Jiang, Chensi Zhang, Xidian University; Chongwen Huang, Zhejiang University; Jianhua Ge, Xidian University; Chau Yuen, Nanyang Technological University
- 5 WiLiConnect: A Novel CSI Sharing Technique in Hybrid WiFi/LiFi Networks**
Saswati Paramita, Arani Bhattacharya, Vivek Bohara, Anand Srivastava, IIIT Delhi
- Tuesday, 25 June 2024 16:00 - 17:30 Heliconia 3501 B*
- 6G: RIS**
- 1 A Sum-Rate Prediction Strategy based on RIS-aided IoT Networks Power Optimization Algorithm**
Xuejie Hu, Yue Tian, Yousi Lin, Xianling Wang, Chen Zhu, Xiamen University of Technology; Yau Hee Kho, Victoria University of Wellington; Wenda Li, University College London
- 2 Effect of Spatial Correlation on RIS-Assisted Wireless Systems Using Pilot-Aided Channel Estimation**
Shuangfei Guo, Hao Huang, Guan Gui, Hikmet Sari, Nanjing University of Posts and Telecommunications
- 3 Near-Field and Far-Field Beamforming Design for RIS-enabled Millimeter Wave Systems**
Ziru Chen, Lin Cai, Illinois Institute of Technology; Xing Hao, Northwest University
- 4 Segment Channel Modeling and Ricean K-Factor Estimation for RIS-Assisted NLOS Communications**
Jian Sang, Boning Gao, Xiao Li, Wankai Tang, Southeast University; Shi Jin, Southern University; Ertugrul Basar, Koc University
- Tuesday, 25 June 2024 16:00 - 17:30 Heliconia 3502*
- 6H: Vehicular Communications**
- 1 Receiver Designs for SC-SCMA Systems over Frequency Selective Channels**
Tianzhu Qin, ziyi yang, Jia'ao Liang, Kaining Han, Jianhao Hu, University of Electronic Science and Technology of China
- 2 Research on End-to-End CT-Polar System for Semantic Communication**
Baixin Su, Shufeng Li, Libiao Jin, Communication University of China; Lan Zhang, Clemson University; Deyou Zhang, KTH Royal Institute of Technology
- 3 Secure NOMA-Assisted Multi-User mmWave Vehicular Communications Using Artificial Noise**
Yiting Yan, Ying Ju, Suheng Tian, Lei Liu, Jie Feng, Xidian University; Jianbo Du, Xi'an University of Posts and Telecommunications; Qingqi Pei, Xidian University; Celimuge Wu, The University of Electro-Communications
- 4 Toward Optimizing Delivery Probability in NR Sidelink by MCS Selection**
Qiang Fu, Jiajia Liu, Jiadai Wang, Northwestern Polytechnical University
- Tuesday, 25 June 2024 16:00 - 17:30 Heliconia 3503*
- 6I: Channel Measurement**
- 1 Channel Measurements for Integrated Sensing and Communication: Method and Prototype Test**
Shengli Ding, Baolong Chen, Jianzhi Li, Junjie Tan, Jian Yao, Dajie Jiang, Fei Qin, VIVO Mobile Communication Co.Ltd.
- 2 Measurement-based Spatiotemporal Characterization of the Indoor Propagation Channels at 220 GHz**
Wang Yang, Chongqing University of Posts and Telecommunications; Xianrong Zhou, Xi Liao, Chongqing

University of Post and Telecommunications; Ziming Yu, Huawei Technology Company

- 3 MIMO Channel Capacity Measurements in an Outdoor-to-Indoor Environment at 6 and 37 GHz**
Ruth Gebremedhin, CableLabs; Wilhelm Keusgen, Technische Universität Berlin; Dorin Viorel, Ruoyu Sun, CableLabs

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6J: Energy Management

- 1 Learning-Based Computation Offloading in Hierarchical MEC System with Energy Harvesting**
Chufan Jian, Jie Gong, Sun Yat-Sen University
- 2 An Adaptive Content Sharing Scheme of Multi-Cluster Head for Energy Harvesting-Based D2D Multicast Communication**
Ying Luo, SouthWest University of Science and Technology; Jun-tao Wu, University of Electronic Science and Technology of China; Min Zeng, SouthWest University of Science and Technology; Kai Xiong, University of Electronic Science and Technology of China; Hong Jiang, SouthWest University of Science and Technology
- 3 Cognitive Covert Transmission Aided by Energy Harvesting**
Rong Xie, Rui Chen, Kecong Hu, China Three Gorges University
- 4 Energy-Efficient Data Offloading for Earth Observation Satellite Networks**
Lijun He, Northwestern Polytechnical University; Ziye Jia, Nanjing University of Aeronautics and Astronautics; Juncheng Wang, Hong Kong Baptist University; Feng Wang, Singapore University of Technology and Design; Erick Lansard, Chau Yuen, Nanyang Technological University
- 5 Energy-Efficient Joint Handover and Beam Switching Scheme for Multi-LEO Networks**
Sz-Han Chen, National Yang Ming Chiao Tung University; Li-Hsiang Shen, National Central University; Kai-Ten Feng, National Yang Ming Chiao Tung University; Lie-Liang Yang, University of Southampton; Jen-Ming Wu, Hon Hai Research Institute

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6K: IoT/IoV/M2M Communications

- 1 Autonomous Cooperative Platooning Powered by LiDAR-Guided Adaptive Cruise Control**
Abhishek Thakur, Rakshith Ram C.A., Srivishnu Sathvik, Bhavani Badugu, Swapnil P. Rajalakshmi, Indian Institute of Technology Hyderabad
- 2 Indoor Backscattering Communication by Using Commercial LTE Pilots**
Jingyi Liao, Xiyu Wang, Kalle Koskinen, Tianshu Zhang, Kalle Ruttik, Aalto University; Riku Jäntti, Aalto University; Dinh Thuy Phan Huy, Orange
- 3 Joint Routing and Scheduling Optimization with Swarm Intelligence in Time-Sensitive Networking**
Zhuoqun Wang, Lei Sun, Huihui Wang, Wenxue Hu, Jianquan Wang, Zhangchao Ma, University of Science and Technology Beijing
- 4 Low-complexity Broadband Array Processing in Dynamic Scenario with Jamming**
Daniel Valle de Lima, Federal Institute of Education, Science and Technology of Ceará (IFCE); Joao Paulo Javidi da Costa, Antonio Arlis Santos da Silva, Giovanni Almeida Santos, Jose Alfredo Ruiz Vargas, Hamm-Lippstadt University of Applied Sciences (HSHL); Auzuir Ripardo de Alexandria, Federal Institute of Education, Science and Technology of Ceará (IFCE)
- 5 Quasi-Neural Network based Sequence Detection for Single-Carrier Communications**
Qinghe Du, Chenye Wang, Yi Jiang, Fudan University; Rong Ran, Ajou University

Wednesday 26 June 2024

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7B: AI-enhanced Communication II

1 Linear Regression-Based Channel Estimation for Non-Gaussian Noise

Prerna Chaudhary, Isha Chauhan, Indian Institute of Technology Delhi; B. R. Manoj, Indian Institute of Technology Guwahati; Manav R Bhatnagar, IIT Delhi

2 LiteWiHAR: A lightweight WiFi-based human activity recognition system

Chuan Liu, Yue Liu, Macao Polytechnic University; Yanling Hao, Queen Mary University of London; Xingqi Zhang, University College Dublin

3 On the Implementation of Neural Network-based OFDM Receivers

Moritz Benedikt Fischer, Sebastian Dörner, University of Stuttgart; Takayuki Shimizu, Chinmay Mahabal, Hongsheng Lu, Toyota Motor North America; Stephan ten Brink, University of Stuttgart

4 Power Adaptation for Goal-Oriented Communication over Fading Channels

Liangling Lai, Xiangyun Zhou, Australian National University

5 TRTFL: A Transformer based Robust Time-frequency Localization Detector for Spectrogram with Overlapping Signals

Runyi Zhao, Yuhan Ruan, Xidian University; Huacheng Xu, Northwest University; Tao Li, Rui Zhang, Dong Yang, Yongzhao Li, Xidian University

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7C: Federated Learning III

1 Cooperative Relay Assisted Federated Learning over Fading Channels

Zhihao Dong, Harbin Institute of Technology, Shenzhen; Xu Zhu, Harbin Institute of Technology (Shenzhen); Jie Cao, Harbin Institute of Technology, Shenzhen; Yufei Jiang, Harbin Institute of Technology (Shenzhen); Vincent K. N. Lau, The Hong Kong University of Science and Technology

2 Federated Learning for User Mobility Classification in 5G Heterogeneous Networks

Syed Maaz Shahid, Sungoh Kwon, University of Ulsan

3 Incentivizing Quality Contributions in Federated Learning: A Stackelberg Game Approach

Weicong Zhang, Qin Wang, Haitao Zhao, Wenchao Xia, Hongbo Zhu, Nanjing University of Posts and Telecommunications

4 Real-time Wireless Channel Prediction Based on Online Federated Learning

Siyang Liu, Congduan Li, Jieyi Deng, Sun Yat-sen University

5 SHFL: Selective Hierarchical Federated Learning for Non-IID Data Distribution

Fan-Hsun Tseng, Yu-Teng Lai, National Cheng Kung University

Wednesday, 26 June 2024 11:00 - 12:30 Heliconia 3404

7D: MIMO Systems I

1 A Decoding-aided Joint Estimation of Channel and Phase Noise in MIMO Systems

Conglin Wang, Southeast University

2 A Hybrid Transmission Scheme for Cell-Free Massive MIMO Systems with Phase Offset

Liyuan Qin, Rui Zhang, Yongzhao Li, Yuhan Ruan, Tao Li, Dong Yang, Xidian University; Hao Liu, Nokia Shanghai Bell; Tao Yang, Bell Labs, China

3 Convergence Condition of Simplified Information Geometry Approach for Massive MIMO-OFDM Channel Estimation

Mingrui Fan, Jiyuan Yang, Yan Chen, Southeast University; Anan Lu, Southeast University, Nanjing, China; Xiqi Gao, Southeast University; Xiang-Gen Xia, University of Delaware; Dirk T.M. Slock, EURECOM

4 Cost-Efficient VBI-Based Multiuser Detection for Uplink Grant-Free MIMO-NOMA

Boran Yang, Xiaoxu Zhang, Li Hao, Southwest Jiaotong University; George Karagiannidis, Aristotle University of Thessaloniki; Xin Quan, Southwest Jiaotong University; Octavia A. Dobre, Memorial University

5 Fully-/Partially-Connected Hybrid Beamforming for Multiuser mmWave MIMO Systems

Xin Liu, Yuan Jiang, Lei Zhao, Sun Yat-sen University; Liwei Liang, China Telecom Guangdong Branch

Wednesday, 26 June 2024 11:00 - 12:30 Heliconia 3405

7E: Transmission and Reception I

1 Age of Information in Linear Multi-hop Wireless Networks

Xinhui Han, Haoyuan Pan, Shenzhen University

2 Beam Pattern Modulation Embedded mmWave Hybrid Transceiver Design Towards ISAC

Boxun Liu, Peking University; Shijian Gao, Samsung Semiconductor; Zonghui Yang, Xiang Cheng, Peking University

3 Blind Residual CFO Estimation via CNN-Enabled EM Algorithm

Penghao Cai, Fuqian Yang, Zhipeng Xue, Yutao Wang, Hanyu Zhu, Purple Mountain Laboratories; Xiqi Gao, Southeast University

4 Delay Performance of a Multi-hop Relay Network with Battery-Assisted Energy Harvesting Nodes

Amar Kumar Mishra, Indian Institute of Technology Delhi; Kamal Agrawal, Shiv Nadar Institution of Eminence; Vinay Kumar, Shankar Prakraiya, Indian Institute of Technology, Delhi

5 Design of Capacity-Approaching Constellation and Pre-scaling for Spatial Modulation

Xinghao Guo, Yin Xu, Hanjiang Hong, Size Peng, Dazhi He, Wenjun Zhang, Shanghai Jiao Tong University; Yi-yan Wu, Communications Research Centre

Wednesday, 26 June 2024 11:00 - 12:30 Heliconia 3406

7F: Wireless Networks I

1 A DDoS Detection Method Over Radio Interfaces Based on Multiple Physical Layer Attributes

Yuhan Tian, Na Li, Xiaofeng Tao, Beijing University of Posts and Telecommunications; Xiashi Da, China Academy of Information and Communications Technology

2 A novel ZUC-PRN Generator using a Fully-Connected Neural Network.

Jayati Dutta, Priyanka Peri, Indian Institute of Technology Hyderabad; Rohith Malkuchi, Virginia Polytechnic Institute and State University, Blacksburg, USA

3 Confirmed-Location Group Membership for Intrusion-Resilient Cooperative Maneuvers

Júlio Mendonça, Azin Bayrami Asl, SnT, University of Luxembourg; Federico Lucchetti, University of Lausanne; Marcus Voelp, SnT, University of Luxembourg

4 Cybertwin-aided Transmission for Cloud-Native Applications in Multi-homing Wireless Networks

Zhou Zou, Mengy Zhang, Nanjing University; Jiacheng Chen, Peng Cheng Laboratory; Haibo Zhou, Nanjing University

5 Edge-to-cloud Latency Aware User Association in Wireless Hierarchical Federated Learning

Rung-Hung Gau, Di-Chun Liang, Ting-Yu Wang, National Yang Ming Chiao Tung University; Chun-Hung Liu, Mississippi State University, USA

Wednesday, 26 June 2024 11:00 - 12:30 Heliconia 3501 B

7G: RIS/IRS

1 Blind Channel Estimation for Reconfigurable Intelligent Surface Assisted OFDM Systems

Norisato Suga, Shibaura Institute of Technology

2 Combination of GSIC and RIS-Enabled Signal Separation in IQ Domain for Parallel Reception with Imperfect CSI

Weiran Luo, Sun Yat-Sen University; Xiaoxia Huang, Sun Yat-sen University

3 Joint Optimization for Secure IRS-assisted NOMA SWIPT Networks with Artificial Jamming

Ruoming Sun, Wei Wang, Dalian University of Technology; Lexi Xu, China United Network Communications Corporation; Nan Zhao, Dalian University of Technology; Naofal Al-Dhahir, University of Texas at Dallas; Xianbin Wang, Western University

4 MSE minimization for RIS-Assisted Wireless Networks with Phase Error and Phase-dependent Amplitude Response

Sin-Yu Huang, Research Center for Information Technology Innovation, Academia Sinica; Jia-You Lin, National Chung Cheng University; Chih-Yu Wang, Academia Sinica; Ren-Hung Hwang, National Yang Ming Chiao Tung University

5 Multi-IRS Empowered Terahertz Wireless Communication over Generalized Fading

Rithwik Premanand, Narendra Vishwakarma, Ranjan Singh, A.S. Madhukumar, Nanyang Technological University

Wednesday, 26 June 2024 11:00 - 12:30 Heliconia 3502

7H: Vehicular Electronics / Robot Control

1 A Novel Estimation Scheme of Insensitive Areas for MEC Centralized Robot Control by Private 5G

Daisuke Uchida, Satoshi Takaya, Tatsuma Hirano, Tomoya Tandai, Toshiba Corp.; Hiroyuki Nishikawa, Toshiba Infrastructure Systems & Solutions Corp.

2 A Novel Gradient-based Motion Planning for Single-Track Two-wheeled Robots in Complex Environments

Mingfang Liu, Tsinghua university

3 A Position Aware Transformer Architecture for Traffic State Forecasting

Rajarshi Chattopadhyay, Chen-Khong Tham, National University of Singapore

4 Tire-Road Friction Coefficient Estimation of Sideslip-Camber Combined Situation

Yanru Suo, Dang Lu, Haidong Wu, Yandong Zhang, Jilin University; Tao Zhou, Wanli Tyre Corporation Limited

Wednesday, 26 June 2024 11:00 - 12:30 Heliconia 3503

7I: Channel Modeling

1 A Quasi-deterministic Channel Model for Underwater Acoustic Communication Systems

Yuxuan Yang, Yilin Ma, Southeast University; Hengtai Chang, Purple Mountain Laboratories; Cheng-Xiang Wang, Southeast University

2 An Improved Bounding Volume Hierarchies Method for V2V Ray Tracing Channel Modeling

Chen Wang, Southeast University; Songjiang Yang, Yinghua Wang, Purple Mountain Laboratories; Cheng-Xiang Wang, Jie Huang, Southeast University

3 BEM Based Channel Estimation via Sparse Bayesian Learning for OTFS over Fast Time-Varying Channel

Xing Zhang, Fangjiong Chen, Jie Feng, Maowu Zhou, Hua Yu, South China University of Technology

4 Channel Modeling Framework for Bistatic ISAC under 3GPP Standard

Chenhao Luo, Aimin Tang, Shanghai Jiao Tong University; Fei Gao, Nokia Bell Labs China; Jianguo Liu, Nokia Shanghai Bell; Xudong Wang, Shanghai Jiao Tong University

5 Characterization of Wireless Channel Semantics: A New Paradigm

Zhengyu Zhang, Ruisi He, Mi Yang, Xuejian Zhang, Ziyi Qi, Yuan Yuan, Bo Ai, Beijing Jiaotong University

Wednesday, 26 June 2024 11:00 - 12:30 Heliconia 3504

7J: Energy Management for Vehicles

1 Beyond Profit: A Multi-Objective Framework for Electric Vehicle Charging Station Operations

Shuoyao Wang, Jiawei Lin, Shenzhen University

2 Energy Efficiency Maximization for Secure Live Video Streaming in UAV Wireless Networks

Lan Yi, Jiansong Miao, Beijing University of Posts and Telecommunications; Tao Zhang, Beijing Jiaotong University; Yushun Yao, Beijing University of Posts and Telecommunications; Xiangyun Tang, Minzu University of China; Zaodi Song, North Automatic Control Technology Institute

3 Fair-enough Charging of Electric Vehicles

Tania Panayiotou, KIOS Research and Innovation Center of Excellence; George Ellinas, University of Cyprus

4 Impact of Smart Scheduling on Nationwide Charging Infrastructure of Harbour Crafts

Mohasha, A*STAR

5 Time-Efficient EV Energy Management through In-Motion V2V Charging

Shuohan Liu, Qilu University of Technology (Shandong Academy of Sciences); Wei Zhang, Shandong Computer Science Center; Yue Cao, Wuhan University; Qiang Ni, Lancaster University; Carsten Maple, University of Warwick; Hai Lin, Wuhan University

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7K: IRS

1 BLMS and BRLS-based adaptive CSI estimation for IRS-assisted SISO and MIMO systems

Anand Mehrotra, Indian Institute of Technology Kanpur; Suraj Srivastava, Indian Institute of Technology Jodhpur; Aditya K. Jagannatham, Indian Institute of Technology Kanpur

2 IRS-assisted Access Link-based Multihop THz Communication

Shubha Sharma, Rithwik Premanand, Nanyang Technological University, Singapore; Ankush Vashistha, Infocomm Technology, Singapore Institute of Technology, Singapore; A.S. Madhukumar, Nanyang Technological University

3 Joint Beamforming and Location Optimization for UAV-IRS Enhanced Cell-Free Network

Xiaokai Song, Wanli Ma, Harbin Institute of Technology; Jie Tang, South China University of Technology; Zhutian Yang, Zhendong Yin, Zhilu Wu, Harbin Institute of Technology

4 Joint Design for Cramér-Rao Bound and Secure Transmission in Semi-IRS Aided ISAC Systems

Wenjing Wei, Xiaowei Pang, Dalian University of Technology; Xiaoqi Qin, Beijing University of Posts and Telecommunications; Shiqi, Gong; Chengwen Xing, Beijing Institute of Technology; Nan Zhao, Dalian University of Technology; Dusit Niyato, Nanyang Technological University

5 Spectral Efficiency Optimization for Absorbable IRS based Wireless Communications with Strong Interferences

Xinyue Li, Yufei Jiang, Xu Zhu, Tong Wang, Jie Cao, Long Li, Harbin Institute of Technology, Shenzhen

Wednesday, 26 June 2024 14:00 - 15:30 Heliconia Junior Ballroom

8A: Edge Computing

- 1 AoI-Aware Energy-Efficient Vehicular Edge Computing Using Multi-Agent Reinforcement Learning With Actor-Attention-Critic**
Liqin Xiao, Yan Lin, Yijin Zhang, Nanjing University of Science and Technology; Jun Li, Nanjing University of Science and Technology, China; Feng Shu, Hainan University
- 2 Decentralized Vehicular Edge Computing Framework for Energy-Efficient Task Coordination**
Mohammad Fardad, Gabriel-Miro Muntean, Irina Tal, Dublin City University
- 3 Reducing Computation, Communication, and Storage Latency in Vehicular Edge Computing**
Mostafa Kishani, Zdenek Becvar, Czech Technical University in Prague
- 4 Straggler Mitigation in Edge-Based Split Learning with Coalition Formation Game**
Julia Fu, National Taiwan University; Chih-Yu Wang, Academia Sinica; Hung-Yu Wei, National Taiwan University
- 5 Validation and Evaluation of Computation Offloading in Campus Networks using a Real 5G Setup**
Alexander Artemenko, Robert Bosch GmbH, Stuttgart, Germany; Kushal Kumar Narayana Swamy, SRH Hochschule Heidelberg, Germany; Eugen Volk, Robert Bosch GmbH, Stuttgart, Germany; Sven Erik Jeroschewski, Bosch.IO GmbH, Ullsteinstraße 128, Berlin, Germany; Johannes Dommel, Fraunhofer HHI

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8B: AI-enhanced Networks I

- 1 5G Real-Time QoS-Driven Packet Scheduler for O-RAN**
Wenhao Zhang, Branka Vucetic, The University of Sydney; Wibowo Hardjawana, The University of Sydney
- 2 A Domain-Aware Framework for Interpretable and Resilient Propagation Models: Enabling Digital Twins for Wireless Networks**
Syed Basit Ali Zaidi, University of Glasgow; Waseem Raza, Haneya Naem Qureshi, University of Oklahoma; Muhammad Ali Imran, Ali Imran, Shuja Ansari, University of Glasgow
- 3 A DRL-Based Spectrum-Sharing Scheme for GEO-LEO Co-Existing Satellite Networks**
Yi-Huai Hsu, Lee, Jiun-Ian, Liang-Ya Huang, Wei-Lin Hsiao, Yuan Ze University
- 4 A Hybrid GAN-Based Outage Detection Algorithm for Wireless Networks**
Ma Liyuan, Southeast University
- 5 A Knowledge Graph-based Factor Screening Approach for Wireless Communication Networks**
Yiming Zhou, Xuefang Liu, Wei Liu, Xidian University

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8C: Learning Techniques for Vehicles

- 1 A Dynamic Priority Packet Scheduling for UAV Assisted AoI-aware Network: A Deep Reinforcement Learning Approach**
Xiaoying Fu, Jiansong Miao, Yushun Yao, Beijing University of Posts and Telecommunications; Tao Zhang, Beijing Jiaotong University; Shanling Bai, Lan Yi, Beijing University of Posts and Telecommunications
- 2 Collaborative Multimodal Vehicular Transformer Training Using Federated Learning**
Xingjian Cao, Zonghang Li, Gang Sun, Hongfang Yu, University of Electronic Science and Technology of China
- 3 Deep Learning Based Uplink Precoding for High Speed Train Communications in FD-RAN**
Zeyu Sun, Nanjing University; Jiwei Zhao, Zhejiang University; Yunting Xu, Nanjing University; Jiacheng Chen, Peng Cheng Laboratory; Haibo Zhou, Nanjing University; Lian Zhao, Toronto Metropolitan University

4 ManeuverNet - A Deep Learning Model For Vehicle Maneuver Prediction

Sruthi Sathy, Pandeewari Sankaranarayanan, Arvind Ramanujam, Rajesh Jayaprakash, Tata Consultancy Services

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8D: MIMO Systems II

- 1 Interference Suppression Multiuser MMSE Multiplexing Combined with Optimal Joint Transmit/Receive Diversity for a Cellular Distributed MU-MIMO System**
Ryo Takahashi, Panasonic System Networks R&D Lab. Co., Ltd.; Hidenori Matsuo, Fumiyuki Adachi, Tohoku University
- 2 Joint Beamforming and Phase Shift Design for RIS-aided Cell-Free Massive MIMO Systems with Electromagnetic Interference and Imperfect CSI**
Shuxian Wen, Enyu Shi, Yu Lu, Jiayi Zhang, Bo Ai, Beijing Jiaotong University
- 3 Learning-Based Universal Linear MIMO Precoder for Finite-Alphabet Inputs**
Jaemin Kim, Junho Lee, Yoojin Choi, Samsung Electronics
- 4 Robust MMSE Precoding for Limited-Feedback Multiuser MIMO Systems**
Wentao Zhou, Inkyu Lee, Korea University; Di Zhang, Zhengzhou University; M'erouane Debbah, KU 6G Research Center, Khalifa University of Science and Technology
- 5 Quasi-Optimum Detection of MIMO-SVD Signals with Strong Nonlinear Distortion Effects**
João Gonçalves, Teresa Nogueira, Instituto Superior Técnico; Daniel Dinis, Copelabs, Universidade Lusófona; João Guerreiro, FCT-Universidade Nova de Lisboa, Instituto de Telecomunicações; Rui Dinis, Universidade Nova de Lisboa

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8E: Transmission and Reception II

- 1 Efficient Hardware Implementation of a Minimum Finder for WiFi 7 Soft ML Detector**
Soonwoo Choi, Minki Ahn, Junyoung Jeong, Samsung Electronics
- 2 Energy Detection for Spatial Receive Diversity and On-Off Keying in Rayleigh Fading With Channel Norm Estimation**
Ranjan K. Mallik, Indian Institute of Technology Delhi; Ross Murch, The Hong Kong University of Science and Technology
- 3 Few-Shot Specific Emitter Identification via Neural Architecture Search and Deep Transfer Learning**
Feng Shi, Shufei Wang, Nanjing University of Posts and Telecommunications; Zhenxin Cai, Nanjing University; Yuchao Liu, Beihang University; Yu Wang, Nanjing University of Posts and Telecommunications; Fumiyuki Adachi, Tohoku University; Guan Gui, Nanjing University of Posts and Telecommunications
- 4 Fundamentals of Energy-Efficient Wireless Links: Optimal Ratios and Scaling Behaviors**
Anders Enqvist, Royal Institute of Technology, Sweden; Özlem Tugfe Demir, TOBB University of Economics and Technology, Ankara, Turkey; Cicek Cavdar, Emil Björnson, KTH Royal Institute of Technology
- 5 Hough Transform and Time-Frequency Ridge-based Interference Mitigation in Automotive FMCW Radars**
Abhilash Gaur, Seshan Srirangarajan, Indian Institute of Technology Delhi; Po-Hsuan Tseng, National Taipei University of Technology; Kai-Ten Feng, National Yang Ming Chiao Tung University

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8F: Wireless Networks II

- 1 Efficient Task Offloading through Federated Learning in UAV-Assisted Edge Networks**
Veera Manikantha Rayudu Tummala, Abhishek Hazra, Indian Institute of Information Technology, Sri City; Alakesh Kalita, Singapore Institute of Technology and Design; Mohan Gurusamy, National University of Singapore

2 Knowledge Distillation-based Learning Model

Propagation for Urban Air Mobility

Kai Xiong, Juefei Xie, Zhihong Wang, Supeng Leng, University of Electronic Science and Technology of China

3 Lightweight Instantly Decodable Network Coding in Wireless Broadcast

Le Wang, University of Science and Technology Beijing; Rina Su, Beijing Institute of Technology; Qifu Tyler Sun, University of Science and Technology Beijing; Shaoteng Liu, Network Technology Lab, Huawei Technologies CO.; Zhongshan Zhang, Beijing Institute of Technology; Linqi Song, City University of Hong Kong Shenzhen Research Institute

4 Reconfigurable Intelligent Surface-Aided Physical Layer Authentication With Deep Learning

Haixia Liu, Lixin Li, Xiao Tang, Wensheng Lin, Northwestern Polytechnical University; Fucheng Yang, Navy Aeronautical and Astronautical University; Tong Yin, Northwestern Polytechnical University; zhu han, University of Houston

5 RIS-Assisted Federated Learning Algorithm Based on Device Selection and Weighted Averaging

Yujun Cai, Shufeng Li, Junwei Zhang, Communication University of China; Deyou Zhang, KTH Royal Institute of Technology

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8G: Radio Performance and Resource Allocation

1 Distributed DRL with Multiple Learners for AP Clustering in Large-scale Cell-Free Deployment

Akio Ikami, Yu Tsukamoto, Takahide Murakami, KDDI Research, Inc.; Hiroyuki Shinbo, KDDI Research, Inc; Yoshiaki Amano, KDDI Research, Inc.

2 Highly-Efficient Low-Latency Scheduling Method in Round-Trip Communication for Feedback Control

Ryotaro Iizuka, Takanori Hara, Tokyo University of Science; Yasuaki Yuda, Panasonic Corporation; Kenichi Higuchi, Tokyo University of Science

3 HQAM-OTFS: Enhancing the Shaping Gain of OTFS

Nalluru Sangeeta, IIT Guwahati; Sanjeev Sharma, IIT Varanasi; Kuntal Deka, A. Rajesh, IIT Guwahati

4 Latency-Aware Near-Real-Time RIC Deployment in User-Centric RAN With Cell-Free Massive MIMO: A Telecom Operator Perspective

KMR Amrallah, Takahide Murakami, Yu Tsukamoto, Akio Ikami, KDDI Research, Inc.; Hiroyuki Shinbo, KDDI Research, Inc; Yoshiaki Amano, KDDI Research, Inc.

5 Low-Latency Resource Allocation for Store-and-Forward Transmission in UAV-aided LEO Communication

Jinho Choi, Sivaram Krishnan, Jihong Park, Deakin University

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8H: Vehicular Safety

1 AllTheDocks road safety dataset: A cyclist perception and experience

Chia-Yen Chiang, Ruikang Zhong, Queen Mary University of London; Jennifer Ding, The Alan Turing Institute; Joseph Wood, City, University of London; Mona Jaber, University of Surrey; Joseph Bee, Zwing's

2 Infrastructure-Assisted Collaborative Perception in Automated Valet Parking: A Safety Perspective

Yukuan Jia, Jiawen Zhang, Tsinghua University; Shimeng Lu, Huazhong University of Science and Technology; Baokang Fan, Ruiqing Mao, Sheng Zhou, Tsinghua University; Zhisheng Niu, Tsinghua University, China

3 Mitigating Link-flooding Attacks in Intelligent Transportation System

YuXia, BeijingJiaotongUniversity; Ying Liu, Beijing Jiaotong University; Jianhui Yin, BeijingJiaotongUniversity; Yikun Li, Beijing Jiaotong University; Chengxiao Yu, Peng Cheng Laboratory

4 Next-Gen Vehicular Detection: A Fusion of RF Signal and Fisheye Camera Technologies

Parneet Kaur Dhindsa, Zhenni Pan, Shigeru Shimamoto, Waseda University

5 Real-time risk tag forecasting for safer intelligent transportation

Wei Ming Dan Chia, Singapore Institute of Technology

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8I: Codebook Systems / Antennas

1 A Novel Spherical Codebook Design for Uplink SCMA in Satellite Communications

zhao lingli, Chaowei Wang, Mingliang Pang, Wenyuan Wang, Weidong Wang, Beijing University of Posts and Telecommunications; Fan Jiang, Xi'an University of Posts and Telecommunications; Lexi Xu, China United Network Communications Corporation

2 Limited Feedback on Measurements: Sharing a Codebook or a Generative Model?

Nurettin Turan, Benedikt Fesl, Technical University of Munich; Michael Joham, Munich University of Technology; Zhengxiang Ma, Anthony C. K. Soong, Baoling Sheen, Weimin Xiao, Futurewei Technologies; Wolfgang Utschick, Technische Univesitat Munchen

3 Multiple Antenna-based THz Communication System with Channel Correlation

Shubha Sharma, Nanyang Technological University, Singapore; Ankush Vashista, Infocomm Technology, Singapore Institute of Technology, Singapore; A.S. Madhukumar, Nanyang Technological University

4 On Reducing the Search Complexity for PMI Selection in Codebook-based 5G NR Systems

Harivignesh A, Arunesh Anbukani, Indian Institute of Technology, Madras; K Giridhar, IIT Madras

5 Wideband Communications Aided by Movable Antenna

Lipeng Zhu, Wenyan Ma, National University of Singapore; Zhenyu Xiao, Beihang University; Rui Zhang, National University of Singapore

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8J: Adhoc and Sensor Networks I

1 A Fast Weighted Clustering Algorithm for FANET

Wangna, Meng Xiao, Zhongliang Zhao, Beihang University; Yang Liu, Nanyang Technological University

2 On the Effects of Retransmissions in Single-Cell Slotted Aloha LPWANs

Udo Schilcher, University of Klagenfurt; Stavros Toumpis, Athens University of Economics and Business; Siddhartha S. Borkotoky, Indian Institute of Technology Bhubaneswar, India; Jorge F. Schmidt, Digital Factory Vorarlberg GmbH; Christian Bettstetter, University of Klagenfurt

3 Distributed Spatial Multiplexing (MIMO) System for Practical MANETs with Multiple Imperfections

Mus'ab Yüksel, University of Applied Sciences Darmstadt; Raphael T. L. Rolny, armasuisse Science and Technology; Marc Kuhn, ZHAW; Michael Kuhn, University of Applied Sciences Darmstadt

4 Goodput analysis for burst-noisy low-speed wireless networks during message segmentation

Takashi Ikegawa, The Univerty of Tokyo

5 Joint Computation Offloading with Phase-Shift Design for RIS-Assisted Multi-UAV MEC Network

Shumo Wang, Southeast University; Xiaoqin Song, Nanjing University of Aeronautics and Astronautics; Tiecheng Song, Southeast University

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8K: OFDM/OFDMA

1 Chinese Remainder Theorem Based Carrier Offset Estimation for High-Mobility OFDM Systems

Wei Huang, Bohao Shi, Jun Wang, Xiaoping Li, Qihang Peng, University of Electronic Science and Technology of China

2 Massive Up-Link Multi-User with OFDMA-IDMA Combination based on IEEE 802.11ax

Ta Viet Tai, Le Hoang Nam, Nguyen Viet Ha, Tran Thi Thao Nguyen, VNUHCM-University of Science

3 Real-time Experiments towards an Automotive OFDMA Communication Bus

Matthias Koepp, Kai Habel, Fraunhofer Heinrich-Hertz-Institute, HHI, Berlin; Volker Jungnickel, Fraunhofer HHI

4 Robust PAM Mapping for U-OFDM OWC Systems with LED Nonlinearity

Cheng Yuan, Yufei Jiang, Xu Zhu, Harbin Institute of Technology (Shenzhen)

5 Tensor Based Channel Estimation for Multi-RIS Assisted OFDM System

Hao Liu, Yuxing Lin, Xiao Li, Southeast University; Shi Jin, Southern University

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9B: AI-enhanced Networks II

1 A Network Slicing Elastic Switching Algorithm For VR Devices Based on DDQN

Zhou Yuanyuan, Xiaohui Li, Siting Lv, Guodong He, Mingli Shi, Xingbo Chen, Xidian University

2 Accelerating DNN-Based Detection by MADDNESS Approximation

Shuaicong Gong, Shuangyi Qian, Southeast University; Chunming Zhao, Ming Jiang, National Mobile Communications Research Lab., Southeast University; Yifan Zhang, Southeast University

3 Hybrid Model-Data-Driven User-Activity Detection Network for Massive Random Access

Guangyue Sun, Zhaoji Zhang, xidian university; Ying Li, Xidian University

4 Radio frequency fingerprinting using autoencoder generated features on IEEE 802.15.4 networks

Ines Pereira, NOVA School of Science and Technology / Instituto de Telecomunicações; Luis Bernardo, Universidade Nova de Lisboa / Instituto de Telecomunicações; Rodolfo Oliveira, Universidade Nova de Lisboa/Instituto de Telecomunicações; Paulo Pinto, Universidade Nova de Lisboa

5 Zoom-inRCL: Root Cause Localization at Virtualized Infrastructure Layer for B5G/6G Network Slicing

Yawen Tan, Xidian University; Jiadai Wang, Jiajia Liu, Northwestern Polytechnical University

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9C: Learning Techniques in Communications I

1 3D Positioning via Green Learning in mmWave Hybrid Beamforming Systems

Kai-Rey Liu, Sau-Hsuan Wu, National Yang Ming Chiao Tung University; C.-C. Jay. Kuo, University of Southern California; Prof. Lie-Liang Yang, University of Southampton; Kai-Ten Feng, National Yang Ming Chiao Tung University

2 Adaptive Signal Feature-Based Deep Learning for Enhanced Specific Emitter Identification

Junzhi Xu, Miao Chen, Nanjing University of Posts and Telecommunications; Fangqing Wen, China Three Gorges University; Gejiacheng Lu, Lifan Hu, Yu Wang, Nanjing University of Posts and Telecommunications; Yun Lin, Harbin Engineering University; Guan Gui, Nanjing University of Posts and Telecommunications

3 Advancements in Bangla Speech Emotion Recognition: A Deep Learning Approach with Cross-Lingual Validation

Khorshed Alam, United International University; Mahbulul Haq Bhuiyan, Md Junayed Hossain, Md Fahad Monir, Md Asif Bin Khaled, Independent University, Bangladesh

4 Approaching the MMSE Bound of Channel Estimation by Machine Learning

Federico Penna, Samsung Electronics; Hyukjoon Kwon, Samsung; Dongwoon Bai, Samsung US R&D Center

5 Deep Joint Source-Channel Coding using Overlap Image Division for Block Noise Reduction

Ryunosuke Yamamoto, Yoshiaki Inoue, Daisuke Hisano, Osaka University

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9D: MIMO Systems III

1 MADDNESS Detector for MIMO Systems with Learning Vector Quantization

Shuangyi Qian, Shuaicong Gong, Southeast University; Chunming Zhao, Ming Jiang, National Mobile Communications Research Lab., Southeast University

2 MSE Minimization in RIS-Aided MU-MIMO with Discrete Phase Shifts and Fronthaul Quantization

Parisa Ramezani, KTH Royal Institute of Technology; Yasaman Khorsandmanesh, KTH; Emil Björnson, KTH Royal Institute of Technology

3 Novel Prony-Based Channel Prediction Methods for Time-varying Massive MIMO Channels

Ching-Tang Huang, Yu-Chih Huang, National Yang Ming Chiao Tung University; Shin-Lin Shieh, National Taipei University; Po-Ning Chen, National Yang Ming Chiao Tung University

4 PAPR Reduction Using Average Transmit Signal Power Difference Among Transmit Antennas for Massive MIMO-OFDM with Uniform Planar Array

Soma Taguchi, Takanori Hara, Tokyo University of Science; Satoshi Suyama, Satoshi Nagata, NTT DOCOMO INC.; Kenichi Higuchi, Tokyo University of Science

5 Position-Aware Beam Training for Near-Field Millimeter-Wave XL-MIMO Communications

Yongcheng Liu, Weicao Deng, Min Li, Minjian Zhao, Zhejiang University

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9E: Transmission and Reception III

1 Hybrid Linear and Nonlinear Uplink Cooperative Interference Cancellation for Cellular-Connected UAV

Xin Wei, Weidong Mei, Zhi Chen, University of Electronic Science and Technology of China

2 Instantaneous Bandwidth Estimation for Efficient Sampling of Electrocardiograms

Christopher Willuweit, Johannes Königs, Carsten Bockelmann, Armin Dekorsy, University of Bremen

3 Irregular Element Selection for Intelligent Reflecting Surface with Mutual Coupling

Fan-Hsun Tseng, Chin-Hung Liu, National Cheng Kung University; Hsin-Hung Cho, Chi-Yuan Chen, National Ilan University

4 Multi-Modal Fusion for Enhanced Automatic Modulation Classification

Yingkai Li, Shufei Wang, Gao Shen, Yibin Zhang, Nanjing University of Posts and Telecommunications; Qianyun Zhang, Beihang University; Yun Lin, Harbin Engineering University; Guan Gui, Nanjing University of Posts and Telecommunications

5 Multi-Stage Time-Space-Power Resource Allocation: From the Perspective of User Experience Rate

Kehua Zhang, Harbin Institute of Technology, Shenzhen; Zhongxiang Wei, Tongji University; Xu Zhu, Harbin Institute of Technology (Shenzhen); Wenjun Hou, Harbin Institute of Technology, Shenzhen; Zhihao Dong, Harbin Institute of Technology (Shenzhen)

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9F: Wireless Protocols

1 A random access protocol for mixed-traffic in LEO satellite-based IoT communication

Thien Thi Thanh Le, Singapore University of Technology and Design; Naveed Ul Hassan, Lahore University of Management Sciences; Erick Lansard, Chau Yuen, Nanyang Technological University

2 Age of Information Aware Task Allocation for Crowd Sensing: A Pricing-Matching Approach

Wenqian Zhou, Xuying Zhou, Ning Jin, Jingyi Xu, China Jiliang University; Wei Wang, Zhejiang University; Chau Yuen, Nanyang Technological University

3 Design and Implementations of non-3GPP Wireline Access Gateway for 5G Wireless and Wireline Convergence

Pai-Hui Wang, Hung-Chang Tsao, Li-Hsing Yen, Chien-Chao Tseng, National Yang Ming Chiao Tung University

4 Equitas: Fairness-Aware Dynamic Link Selection for EMLSR Operation in IEEE 802.11be

Ching-Lun Tai, Shyam Krishnan Venkateswaran, Raghupathy Sivakumar, Georgia Institute of Technology

5 Target Tracking with Integrated Sensing and Communications in IEEE 802.11bf

Ching-Lun Tai, Jingyuan Zhang, Douglas M. Blough, Raghupathy Sivakumar, Georgia Institute of Technology

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9G: UAV Communication

1 Multiple UAV-based FSO System with Opportunistic Relay Selection over M'alaga Turbulence Channel

Deepshikha Singh, Swaminathan R, Indian Institute of Technology Indore

2 Outage Performance of Dual-Hop with Wavelength Diversified UAV-Based FSO Links Under Sandstorms

Mohammed Gismalla, Suhail I. Al-Dharrab, Saleh Alawsh, Ali Hussein Muqaibel, King Fahd University of Petroleum and Minerals

3 Resource Allocation Strategy for Wireless Powered Communication Networks with UAV-Assisted Edge Computing

Xinyu Zhang, Yisheng Zhao, Hongyi You, Kaige Jian, Li Liang, Fuzhou University

4 UAV Trajectory and Resource Optimization for NOMA-VLC Systems via HA-DRL Algorithm

Liang Li, Weishen Wang, Yuxuan Liao, Shenzhen International Graduate School, Tsinghua University; Xinke Tang, Peng Cheng Laboratory; Yuhan Dong, Tsinghua University

5 UAV Trajectory Optimization for Sensing Exploiting Target Location Distribution Map

Xiangming Du, Shuowen Zhang, Liang Liu, The Hong Kong Polytechnic University

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9H: Automated Vehicles

1 Can Edge Computing fulfill the requirements of automated vehicular services using 5G network?

Wendlasida Ouedraogo, Telecom SudParis; Andrea Araldo, Badii Jouaber, Hind Castel, Remy Grunblatt, Telecom SudParis, Institut Polytechnique de Paris

2 Generative AI-enabled Sensing and Communication Integration for Urban Air Mobility

Zifan Sha, Wenwei Yue, Shuo Wang, Nan Cheng, Xidian University; Jiaming Wu, Chalmers University of Technology; Changle Li, Xidian University

3 PointGAN: A Catalyst for Enhanced Vulnerable Road User Detection in Autonomous Navigation

Gunasekaran Raja, Anna University; Hosam Alhakami, Umm Al-Qura University, Makkah, Saudi Arabia; Sahaya Beni Prathiba, Vellore Institute of Technology, Chennai, India; Jayadev Needhidevan, Priyadarshni Vasudevan, Rupali Subramanian, Anna

University, MIT Campus, Chennai, India; Kapal Dev, Munster Technological University

4 Prioritization of Maneuver Coordination Messages and the Impact of Decentralized Congestion Control

Daniel Maksimovski, Technische Hochschule Ingolstadt; Silas Lobo, CARISSMA Institute for Electric; Christian Facchi, Technische Hochschule Ingolstadt

5 Reducing Communication Cost and Latency in Autonomous Vehicles with Subscriber-centric Selective Data Distribution

Nora Sperling, Rolf Ernst, Technische Universität Braunschweig

Thursday, 27 June 2024 11:00 - 12:30 Heliconia 3503

9I: Coding I

1 Block Code Design Based on Golay Code for Future Communication Systems

Changlong Xu, Liangming Wu, Wei Liu, Hao Xu, Qualcomm

2 Deep Joint Source Channel Coding With Attention Modules Over MIMO Channels

Weiran Jiang, Beijing Jiaotong University; Wei Chen, Bo Ai, Beijing Jiaotong University

3 Hybrid Shaping for Bit-Interleaved Coded Modulation with Iterative Decoding

Jiayi Yang, Sun Yat-sen University; Qianfan Wang, Sun yat-sen university; Congduan Li, Xiao Ma, Sun Yat-sen University

4 Intelligent Degree Distribution of Rateless Codes in Industrial Scenarios

Jinhui Tang, Yusun Fu, Yue Qiao, Junpeng Yin, Shanghai Jiao Tong University

5 Low-Complexity Decoder of Analog Fountain Codes for Industrial Internet of Things

Zhang Ke, Peng Cheng Laboratory; Jian JIAO, Harbin Institute of Technology (Shenzhen); Ye Wang, Broadband Communication Department, Pengcheng Laboratory; Rongxing LU, University of New Brunswick; Zhang Qinyu, Harbin Institute of Tech.

Thursday, 27 June 2024 11:00 - 12:30 Heliconia 3504

9J: Adhoc and Sensor Networks II

1 On or Move On? Optimal Mobile Data Collection in mmWave Sensor Networks

Vamshi Vijay Krishna Jeripotula, V Mahendran, Venkataramana Badarla, Indian Institute of Technology Tirupati

2 Received Signal Aided Implicit Node Clustering in LPWAN

Takahiro Saraya, Aoto Kaburaki, Koichi Adachi, The University of Electro-Communications; Osamu TAKYU, Shinshu University; Takeo Fujii, The University of Electro-Communications; Mai Ohta, Fukuoka University

4 SWIPT-Enabled MISO Ad Hoc Network Underlay RSMA-based Cellular Network with IRS

Nguyen Thi Thanh Van, Nguyen Cong Luong, Phenikaa University; Feng Shaohan, Zhejiang Gongshang University Hangzhou; Shimin Gong, Sun Yat-sen University; Dusit Niyato, Nanyang Technological University; Dong In Kim, Sungkyunkwan University

5 Toward a Unified Analytical Framework for ISAC Fundamentals in Cellular Networks

Xu Gan, Chongwen Huang, Zhaohui Yang, Xiaoming Chen, Zhejiang University; Jiguang He, TII; Zhaoyang Zhang, Zhejiang University; Chau Yuen, Yong Liang Guan, Nanyang Technological University; Merouane Debbah, Technology Innovation Institute

Thursday, 27 June 2024 11:00 - 12:30 Heliconia 3505

9K: OTFS

1 A Low-Complexity Standard-Compliant PAPR Reduction Scheme for OTFS Modulation

Salil Sharma, IMDEA Networks Institute; Syed Waqas Haider Shah, IMDEA Networks Institute, Madrid, Spain; Joerg Widmer, Imdea

2 ED-OTFS: A New Waveform Design for Orthogonal Time Frequency Space Modulation in High-speed Mobile Communication Scenarios

Ruilin Liu, Gaoze Mu, Jiandi Hu, Ye Gong, Beijing University of Posts and Telecommunications; Yanzhao Hou, Beijing University of

Post Technology; Cui Qimei, Xiaofeng Tao, Beijing University of Posts and Telecommunications; Whai-En Chen, National Chiao Tung University, Taiwan

3 Graph-based Untrained Neural Network Detector for OTFS Systems

Hao Chang, Branka Vucetic, Wibowo Hardjawana, The University of Sydney

4 On the PAPR of Discrete Zak Transform Based OTFS Modulation

Vineetha Yogesh, Anagha V, Indian Institute of Science, Bengaluru; Sandesh Rao Mattu, A Chockalingam, Indian Institute of Science

Thursday, 27 June 2024 11:00 - 12:30 Heliconia 3506

9L: Advanced Applications

1 Attention-based Global Feature Extraction Method For Image Retrieval

Xiangyun He, Lin Ma, Weiqiang Zhao, Harbin Institute of Technology; Danyang Qin, Heilongjiang University

2 Key Point Detection Assisted Near-Field User Localization and Channel Reconstruction

Mengyuan Li, Yu Han, Southeast University; Shi Jin, Southern University

3 Integrated 3D Farm Modeling with Photogrammetry and Optical Camera Communication

Miyu Yamada, Tokyo University of Agriculture and Technology; Naoto Yoshimoto, Chitose Institute of Science and Technology; Yu Nakayama, Tokyo University of Agriculture and Technology

4 Robust Online Temperature Management for Passively Cooled Base Stations

Yi Zhao, Uppsala university; Zhanwei Yu, Uppsala University; Tao Deng, Soochow University; Di Yuan, uppsala university

5 Wireless Gesture Recognition by Commercial LTE Signals with Inter-Cell Interference Mitigation

Shidong Liu, Rui Peng, Yafei Tian, Beihang University

Thursday, 27 June 2024 14:00 - 15:30 Heliconia Junior Ballroom

10A: Sensing and Detection

1 A Novel Sample Selection based Detection Algorithm for Asynchronous SCMA Systems

Han Kaining, Yonghang Dai, Zhang Xuanbo, University of Electronic Science and Technology of China; Jianhao Hu, University of electronic science and technology of china

2 A Real-Time Large Animal Detection Lightweight Network for Autonomous Driving on Highways

Fengchen Wei, University of Sussex

3 A Real-World Road Damage Detection Method Using the YOLOv5s Network

Ziqin Feng, Youxiang Huang, Nanjing University of Posts and Telecommunications; Zhiyi Lu, Nanjing Great Information Technology Co., Ltd.; Feng Shi, Guan Gui, Nanjing University of Posts and Telecommunications

4 YoloV8 Based Novel Approach for Object Detection on LiDAR Point Cloud

Sriya Behera, Indian Institute of Technology Hyderabad; Bhaskar Anand, Indian institute of Technology Hyderabad; P. Rajalakshmi, NMICPS TiHAN, Indian Institute of Technology Hyderabad

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3402

10B: Antenna Design

1 Dual-polarized High-Isolation Dielectric Resonator Antenna for Full-duplex mMIMO

Yuanzhe Gong, Tho Le-Ngoc, McGill University

2 Joint Azimuth-Elevation-Delay Estimation in Massive MIMO via Progressive Subspace Matching

Haoyu Wang, Zhi Sun, Tsinghua University

3 Real-Time Over-the-Air Emulation of Rician Fading Channels for Mobile Antenna Testing

Ali Kourani, Mar Francis De Guzman, Aalto University; Ruiyuan Tian, Huawei Technologies Oy (Finland); Katsuyuki Haneda, Aalto University

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3403

10C: Learning Techniques in Communications II

1 Residual-Network Enabled Deep soft Interference Cancellation for MIMO Detection Without Channel State Information

Li Tong, Beijing University of Posts and Telecommunications

2 Distributed Adaptive Multiuser Scheduling via Multi-Agent Reinforcement Learning in Multicell MIMO Cellular Networks

Shaozhuang Bai, Zhenzhen Gao, Xuewen Liao, Xi'an Jiaotong University; Xiaodong Sun, Xi'an Polytechnic University

3 High Accuracy WiFi Sensing for Vital Sign Detection with Multi-task Contrastive Learning

Yilun Wang, The University of Sydney; Peng Cheng, La Trobe University; Shenghong Li, CSIRO, Marsfield, Australia; Branka

Vucetic, The University of Sydney; Yonghui Li, University of Sydney

4 Learning of Constellation Shaping with Maximum Norms for Terahertz Communication

Bo Che, Qi He, Zun Tan, Zhi Chen, University of Electronic Science and Technology of China

5 Multi-Armed Bandit based Learning Algorithms for Offloading in Queuing Systems

M Sushma, Naveen K P, Indian Institute of Technology Tirupati

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3404

10D: MIMO Systems IV

1 Low-Complexity Linear Decoupling of Users for Uplink Massive MU-MIMO Detection

Sowmya Sreenivasan, Gokularam Muthukrishnan, K Giridhar, Indian Institute of Technology Madras

2 Superimposed Training in Cell-free Massive MIMO: Is It Really Worth It?

Miquel Duran, Felip Riera-Palou, Guillem Femenias, University of the Balearic Islands; Hien Quoc Ngo, Queen's University Belfast; M. Julia Fernández-Getino García, Universidad Carlos III de Madrid

3 Uplink Performance Analysis and Bits Allocation for Massive MIMO Systems with Mixed ADCs

Ziqing Zhen, Jin Xu, Shumei Wei, Xiaofeng Tao, Beijing University of Posts and Telecommunications

4 Waveform Design with Detection Probability Maximization for MIMO-OFDM Integrated Sensing and Communication System

Yuxin Huo, Chengzhao Shan, Yongkui Ma, Honglin Zhao, Harbin Institute of Technology

5 Window Function Design for Non-uniform MIMO Array

Mingsai Huan, Baoxi Guo, Yu Tu, Junli Liang, Northwestern Polytechnical University; Yugang MA, Institute for Infocomm Research, A-STAR; Yonghong Zeng, Institute for Infocomm Research

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3405

10E: Transmission and Reception IV

1 Bayesian Learning-Based Sparse Channel Estimation in Visible Light ADO-OFDM Systems

Shubham Saxena, Indian Institute of Technology Kanpur; Suraj Srivastava, Indian Institute of Technology Jodhpur; Saurabh Sharma, Aditya K. Jagannatham, Indian Institute of Technology Kanpur

2 Iterative Channel Estimation/Detection for DZT-OTFS Using Superimposed Pilot Frames

Vineetha Yogesh, Indian Institute of Science, Bengaluru; Sandesh Rao Mattu, A Chockalingam, Indian Institute of Science

3 Off-Grid Channel Estimation for Uniform Planar Arrays Using Sparse Bayesian Learning

Qijia Zhou, Yuan Jiang, Lei Zhao, Sun Yat-sen University; Changjian Liu, South China Sea Survey Center of the Ministry of Natural Resources

4 PAPR Reduction Method Based on Commonly Reserved Tones Among Multiple Users in FDMA Uplink
Ryusei Yamazaki, Takatori Hara, Tokyo University of Science; Satoshi Suyama, Satoshi Nagata, NTT DOCOMO INC.; Kenichi Higuchi, Tokyo University of Science

5 Widely-Linear Processing of Faster-than-Nyquist Signaling in the Presence of IQ Imbalance
Fouad Ismael, University of Saskatchewan and Alexandria University; Ebrahim Bedeer, University of Saskatchewan

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3406

10F: Wireless Sensing

1 Efficient Design for NOMA Enabled Integrated Sensing and Semantic Communication
Zhouxiang Zhao, Yating Tang, Yuzhi Yang, Zhejiang University; Yuanyuan Dong, Zhejiang Lab; Lexi Xu, China United Network Communications Corporation; Zhaohui Yang, Zhaoyang Zhang, Zhejiang University

2 Enhanced Wireless Sensing by Exploiting Opportunistic 5G-NR Signals
Rui Peng, Yafei Tian, Shengqian Han, Beihang University

3 Goal-Oriented Communications for Distributed Sensing: a joint scheduling and estimation approach
Maxime Ferreira Da Costa, Salah Eddine Elayoubi, Wassim Hajji, CentraleSupélec

4 Probing the time-evolution of the sub-THz radio channel at 160 GHz for communication and sensing
Wilhelm Keusgen, Technische Universität Berlin; Taro Eichler, Rohde & Schwarz

5 VehicleTalk: Lightweight V2V Network Enabled by Optical Wireless Communication and Sensing
Yang Song, Ruoshen Mo, Pinpin Zhang, Chenchen Wang, Yimao Sun, Yanbing Yang, Sichuan University; Zhengguo Sheng, University of Sussex

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3501 B

10G: UAV Networks I

1 Analysis of Handover Rate and Coverage Performance of Mobile Users in UAV Networks
Neetu R. R., Gourab Ghatak, Vivek Bohara, Anand Srivastava, IIIT-Delhi

2 Delay-Tolerant Multi-agent DRL for Trajectory Planning and Transmission Control in UAV-assisted Wireless Networks
Zesong Fan, Shimin Gong, Yusi Long, Lanhua Li, Bo Gu, Sun Yat-sen University; Nguyen Cong Luong, Phenikaa University

3 Experimental Evaluation of the Performance of UAV-assisted Data Collection for Wake-up Radio-enabled Wireless Networks
Abhimanyu Venkatraman Sheshashayee, Matteo Bordin, Pietro Brach del Prever, Davide Villa, Hai Cheng, Northeastern University; Chiara Petrioli, University of Rome La Sapienza; Tommaso Melodia, Stefano Basagni, Northeastern University

4 Intelligent Energy-Efficient and Fair Resource Scheduling for UAV-Assisted Space-Air-Ground Integrated Networks Under Jamming Attacks
Shihao Chen, Helin Yang, Liang Xiao, Changyuan Xu, Xiamen University; Xianzhong Xie, Chongqing University of Posts and Telecommunications; Wanting Yang, Zehui Xiong, Singapore University of Technology and Design

5 Joint Optimization of Flying Trajectory and Task Offloading for UAV-enabled MEC Networks: A Digital Twin-Assisted Hybrid Learning Approach
Jiaqi Wu, Jingjing Luo, Harbin Institute of Technology (Shenzhen); Tong Wang, Lin Gao, Harbin Institute of Technology

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3502

10H: Intelligent Transportation I

1 A Blockchain-Enabled Framework of UAV Coordination for Post-Disaster Networks
Sana Hafeez, Runze Cheng, Lina Mohjazi, Muhammad Ali Imran, Yao Sun, University of Glasgow

2 A Novel Cross-Modal Scene Recognition Algorithm Leveraging Semantic Information
ChanghaoHu, Hengyu Liu, Bangzhen Huang, Lianfen Huang, Xiamen University; Zhibin Gao, Jimei University; Yifeng Zhao, Xiamen University

3 Antenna Evaluation in Wireless Power Transmission System for Autonomous Underwater Vehicles
Haruki Sugino, Satoshi Ishitani, Atsuya Mizota, Sora Anzai, Mamiko Inamori, Tokai University

4 Automated Record Keeping for Statewide Winter Road Maintenance using Telematics Tracks
Yaguang Zhang, Aaron Ault, James V. Krogmeier, Purdue University

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3503

10I: Coding II

1 Precoding Schemes for Wireless Beam Modulation System
Xiao Chen, Congxi Liu, Xinyan Yu, Hang Long, Beijing University of Posts and Telecommunications

2 Representative Ordered Statistics Decoding of Polar Codes
Wang Yiwen, Qianfan Wang, Jifan Liang, Sun yat-sen university; Xiao Ma, Sun Yat-sen University

3 Systematic Turbo-Polar, Turbo-LDPC-Polar, and Turbo-LDPC Codes Based on Belief Propagation Decoding
Rahim Umar, Atta Quddus, Yi Ma, University of Surrey

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3504

10J: Heterogeneous Networks I

1 A Novel Video-on-Demand Broadcasting Scheme for Heterogeneous Receivers
RuijieMa, Ming Chen, Xingjun Wang, Tsinghua University

2 Data Aggregation Based Massive Machine-Type Communications Coexisting With Human-to-Human Communications: Mechanism Design and Performance Evaluation
Tao Wang, Yichen Wang, Yixin Wang, Xi'an Jiaotong University

3 Enhancing Fairness by Iterative Radio Resource Splitting and User Grouping for CoMP
Caroline Zoll, Technical University of Munich; Michael Einhaus, HTWK Leipzig

4 Joint Channel Estimation and User Activity Detection for mmWave Grant-Free Massive MTC Networks Under Pilot Contamination Attack
Yixin Wang, Yichen Wang, Tao Wang, Xi'an Jiaotong University; Julian Cheng, University of British Columbia

5 On the Resource Allocation and User Association in Future Multi-Band Wireless Networks
Feres Darouich, university of Quebec at Montreal, Canada; Cirine Chaieb, Université du Québec à Montréal; Wessam Ajib, University of Quebec at Montreal; Fatma Abdelkefi, Sup'Com

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3505

10K: Power Constrained Communication

1 Age of Synchronization Minimization in Wireless Networks with Random Updates and Hybrid ARQ under Power Constraints
Yuqiao He, Guozhi Chen, Yuchao Chen, Jintao Wang, Jian Song, Tsinghua University

2 Energy-Efficiency Maximization in Cellular D2D-Based V2X Networks with Statistical CSI
Jing Lu, Yuan Jiang, Lei Zhao, Sun Yat-sen University; Liwei Liang, China Telecom Guangdong Branch

3 Joint Energy Harvesting, Semantic Transmission Selection, Channel Allocation and Power Control for Resource-Constrained IoT Networks
Nguyen Huu Sang, Nguyen Duc Hai, Nguyen Duc Duy Anh, Nguyen Cong Luong, Phenikaa University; Shimin Gong, Sun Yat-sen University; Dusit Niyato, Nanyang Technological University

4 Joint Power and Channel Allocation to Minimize Age of Information in Wireless Networks with Time-Varying Channels and Power Constraints

Guozhi Chen, Yuchao Chen, Jintao Wang, Jian Song, Tsinghua University

5 Mean Peak Age of Information Analysis of Energy-Aware Computation Offloading in IIoT Networks

Ernest Tan, Agency for Science, Technology and Research; A.S. Madhukumar, Nanyang Technological University

Thursday, 27 June 2024 14:00 - 15:30 Heliconia 3506

10L: Advances in Communications

1 Link-Level Performance Analysis of DVB Standards in Ultra-Dense LEO Satellite-Terrestrial Networks

Xin Zhang, Yilei Wang, Xiaohan Qin, Nanjing University; Zitian Zhang, Zhejiang Gongshang University; Haibo Zhou, Nanjing University; Xuemin (Sherman) Shen, University of Waterloo

2 MMSE-Aided UAMP Detection for MIMO-OTFS

Xuanyun Ma, Jin Xu, Chao Dong, Kai Niu, Hongze Zhang, Beijing University of Posts and Telecommunications

3 Next-Gen Security: Enhanced DDoS Attack Detection for Autonomous Vehicles in 6G Networks

Sudha Anbalagan, Vellore Institute of Technology, Chennai, India; Wajdi Alhakami, Taif University, Taif, Saudi Arabia; Mugundh Jambukeswaran Bhooma, Vijai Suria Marimuthu, Anna University, MIT Campus, Chennai, India; Kapal Dev, Munster Technological University; Gunasekaran Raja, Anna University

4 Optimal partially superimposed pilot pattern for OTFS communication

Rabah Ouchikh, Ecole Militaire Polytechnique of Algeria; Abdeldjalil Aissa El Bey, IMT Atlantique; Thierry Chonavel, IMT Atlantique, Brest, France; Nacerredine Lassami, Ecole Militaire Polytechnique

5 Performance Evaluation of Routing Protocol for 6G UAV Communication Networks

Vu Khanh Quy, Hung Yen University of Technology and Education; Abdellah Chehri, Royal Military College of Canada; Vi Hoai Nam, Chu Thi Minh Hue, Nguyen Minh Quy, Hung Yen University of Technology

Thursday, 27 June 2024 16:00 - 17:30 Heliconia Junior Ballroom

11A: Spectrum Management

1 A Novel Hybrid ARQ Enabled Network Slicing Scheme for Service Level Agreement Guarantee

Jiayi Zheng, Tao Yu, Shunqing Zhang, Yanzan Sun, Shanghai University

2 DSRC Performance under the Adjacent Channel Interference of Cellular-based V2X at 5.9GHz Band

Hieu Nguyen, Guan Yong Liang, Nanyang Technological University

3 Elimination of Index Ambiguity for Overlapped Signals in Spectrum Sensing

Shuai Zhou, Xidian University; Dishan Wei, Institute of Tracking and Communication Technology; Tao Li, Yongzhao Li, Rui Zhang, Yuhuan Ruan, Dong Yang, Xidian University

4 Maximum Eigenvalue Detection based Spectrum Sensing in RIS-aided System with Correlated Fading

Nikhilsingh Parihar, International Institute of Information Technology, Hyderabad; Praful Mankar, IIIT Hyderabad; Sachin Chaudhari, International Institute of Information Technology, Hyderabad

Thursday, 27 June 2024 16:00 - 17:30 Heliconia 3402

11B: Emerging Technologies in Communication

1 A Low-Complexity Clustering-Aided DQN Method for Dynamic Antenna Control in HAPS

Mondher Bouazizi, Siyuan Yang, Tomoaki Ohtsuki, Keio University

2 An OpenAirInterface-based Ambient Backscatter Communication System Using Pilots

Xin Wang, Orange Innovation China; Dinh Thuy Phan Huy, Orange; Xiaoyu Wang, Orange Innovation China

3 CVTSA: Cooperative VNF and Time-slot Scheduling Algorithm for NFV Orchestration

Chenxi Liao, Jia Chen, Deyun Gao, Xu Huang, Beijing Jiaotong University; Jingjing Liu, China Mobile Group Liaoning Company Limited; Shang Liu, Dongsheng Qian, Beijing Jiaotong University

4 Secure and Efficient Data Sharing for Indoor Positioning with Federated Learning in Mobile Blockchain Networks

Yiping Zuo, Zhengxin, Chen Dai, Nanjing University of Posts and Telecommunications; Jiajia Guo, Southeast University; Fu Xiao, Nanjing University of Posts and Telecommunications; Shi Jin, Southern University

5 User Association with Collaborative Computing for 6G Wireless Networks

Yang Qichen, Jin Xu, Xiaofeng Tao, Beijing University of Posts and Telecommunications

Thursday, 27 June 2024 16:00 - 17:30 Heliconia 3403

11C: Learning Techniques in Communications III

1 Multimodal Deep Learning Empowered Millimeter-Wave Beam Prediction

Binpu Shi, Min Li, Ming-Min Zhao, Ming Lei, Liyan Li, Zhejiang University

2 NeuralGesture Communication: Translating one Sign Language to another Sign Language using Deep Learning Model and gTTs.

Sumaia Anjum Shaba, Sharmin Islam Shroddha, Independent University Bangladesh; Md Junayed Hossain, Md Fahad Monir, Independent University, Bangladesh

3 Optimal Base Station Sleep Control via Multi-agent Reinforcement Learning with Data-driven Radio Environment Map Calibration

Yoshihiro Okawa, Fujitsu Limited; Natsuki Morita, Fujitsu limited; Jun Kakuta, Masatoshi Ogawa, Fujitsu Limited

4 Reinforcement Learning Based Interference Coordination for Port Communications

Siyao Li, Chuhuan Liu, Yifan Chen, Liang Xiao, Helin Yang, Xiamen University

5 WideRate: Reinforcement Learning Rate Adaptation for Mobile Wide Area Networks

Karyn Doke, Elham Sadeghi, Vaasu Taneja, Habib Affinnih, Petko Bogdanov, Mariya Zheleva, University at Albany, SUNY

Thursday, 27 June 2024 16:00 - 17:30 Heliconia 3404

11D: NOMA

1 Energy Efficiency Maximization for Hybrid NOMA Strategy in Multi-User MEC Networks

Wenqi Huang, Kaidi Wang, University of Manchester; Zhiguo Ding, UMIST

2 Handover Algorithms for Enhanced Throughput in a Hybrid OMA-NOMA System with imperfect SIC

Abhirami S, Siva Mouni Nimalidinne, Sai Dhiraj Amuru, Abhinav Kumar, Indian Institute of Technology Hyderabad (IITH)

3 On Performance of Cooperative OFDM Index Modulation aided Hybrid NOMA System

Rahul Makkar, LNM Institute of Information Technology, Jaipur; Monika Jain, Centre of Electronic Governance; Divyang Rawal, The LNMIIT; Nikhil Sharma, LNMIIT; Vijay Kumar Chakka, Shiv Nadar University

4 Stochastic Geometry Analysis for Distributed RIS-Assisted mmWave Communications

Yuan Xu, Zhejiang University; Wei Li, Nanyang Technological University; Chongwen Huang, Zhejiang University; Yongxu Zhu, The University of Warwick; Zhaohui Yang, Zhejiang University; Jun Yang, ZTE Corporation; Jiguang He, TII; Zhaoyang Zhang, Zhejiang University; M'erouane Debbah, KU 6G Research Center, Khalifa University of Science and Technology

- 5 Sub-channel Assignment and Power Allocation in NOMA-enhanced Federated Learning Networks**
Yushen Lin, Kaidi Wang, University of Manchester; Zhiguo Ding, UMIST

Thursday, 27 June 2024 16:00 - 17:30 Heliconia 3405

11E: Navigation

- 1 A New Adaptive Fading Instrumental Variable Pseudolinear Kalman Filter for 3D AOA Target Tracking**
Mengxia He, S. C. Chan, The University of Hong Kong
- 2 Adaptive Point Cloud Clustering Algorithm for Practical Roadside MmWave Radar Systems**
Luyi Zhang, Jinhang Zhang, Haixin Shi, Lu Gao, Xiaopeng Hu, Rui Chen, Xidian University
- 3 Feature Extraction using Variational Auto-encoder for Radar-based Posture Detection Systems**
Eugene Casmin, NOVA University of Lisbon / Instituto de Telecomunicações; Rodolfo Oliveira, Universidade Nova de Lisboa/Instituto de Telecomunicações
- 4 Implementation of NavIC L1 Transmitter and Receiver**
Sathesh Kumar Simhachalam, Indian Institute of Hyderabad
- 5 Undermining Live Feed ML Object Detection Accuracy with EMI on Vehicular Camera Sensors**
Raushan Kumar Singh, Sudeepta Mishra, Yayathi Pavan Kumar S, IIT Ropar

Thursday, 27 June 2024 16:00 - 17:30 Heliconia 3406

11F: Semantic Communications

- 1 Editable-DeepSC: Cross-Modal Editable Semantic Communication Systems**
Wenbo Yu, Bin Chen, Harbin Institute of Technology, Shenzhen; Qinshan Zhang, Shu-Tao Xia, Tsinghua University
- 2 Partial Sampling-based Semantic Communications for Internet of Things**
Kaiwen Yu, Qi He, Gang Wu, University of Electronic Science and Technology of China
- 3 Semantic Communication Challenges: Understanding Dos and Avoiding Don'ts**
Jinho Choi, Jihong Park, Deakin University; Eleonora Grassucci, Danilo Communiello, Sapienza University of Rome
- 4 Universal Weighted-Knowledge Bases for Task-Unaware Semantic Communication Systems**
Shiyao Jiang, Jian Jiao, Harbin Institute of Technology (Shenzhen); Zhang Ke, Ye Wang, Pengcheng Laboratory; Rongxing Lu, University of New Brunswick; Zhang Qinyu, Harbin Institute of Technology

Thursday, 27 June 2024 16:00 - 17:30 Heliconia 3501 B

11G: UAV Networks II

- 1 Joint UAV Trajectory Control and Channel Assignment for UAV-Based Networks with Wireless Backhauling**
Minh Dat Nguyen, Université du Québec à Montréal (UQAM); Wessam Ajib, University of Quebec at Montreal; Wei-Ping Zhu, Concordia University
- 2 Modeling of Multi-UAV Networks based on Integrated Access and Backhaul for NTN**
Jinho Choi, Deakin University
- 3 NOMA Assisted Semi-Grant-Free Transmission in UAV Networks with Multi-User Scheduling**
Junlin Huang, Huabing Lu, Dalian University of Technology; Jie Tang, South China University of Technology; Nan Zhao, Dalian University of Technology; Zhaoyuan Shi, Anqing Normal University; Xianbin Wang, Western University
- 4 Securing the Skies: An IRS-Assisted AoI-Aware Secure Multi-UAV System with Efficient Task Offloading**
Poorvi Joshi, National University of Singapore; Alakesh Kalita, Singapore Institute of Technology and Design; Mohan Gurusamy, National University of Singapore

Thursday, 27 June 2024 16:00 - 17:30 Heliconia 3502

11H: Intelligent Transportation II

- 1 Broadband Beamforming via Frequency Invariance Transformation and PARAFAC Decomposition for Jamming Mitigation in V2X Scenarios**
Daniel Valle de Lima, Federal Institute of Education, Science and Technology of Ceará (IFCE); Joao Paulo Javidi da Costa, Antonio Arlis Santos da Silva, Giovanni Almeida Santos, Jose Alfredo Ruiz Vargas, Hamm-Lippstadt University of Applied Sciences (HSHL); Auzuir Ripardo de Alexandria, Federal Institute of Education, Science and Technology of Ceará (IFCE)
- 2 CAV as a Mobile Control Platform: A Paradigm for Traffic Management on Highways**
Xianhui Wu, Xidian University; Wenwei Yue, xidian university; Zifan Sha, Xidian University; Yimeng Feng, Macquarie University
- 3 Digital Twin Aided Predictive Scheduling and Bandwidth Allocation for Multi-Vehicle Cooperative Perception Systems**
Binbin Lu, University of Macau; Xumin Huang, GDUT; Yuan Wu, University of Macau; Liping Qian, Zhejiang University of Technology; Dusit Niyato, Nanyang Technological University; Tony Q.S. Quek, Singapore University of Technology and Design; Cheng-Zhong Xu, Department of Computer and Information Science, University of Macau
- 4 Distributed DRL for Device Access in Symbiotic Radio-Aided High-Speed Railway Networks**
Difei Jia, Fengye Hu, Jilin University; Qianqian Zhang, University of Electronic Science and Technology of China (UESTC); Zhuang Ling, Jilin University
- 5 Synthetic Time-series Data Generation with 3D Convolution for EV Systems**
Xudong Hu, Guihai Zhang, Biplab Sikdar, National University of Singapore

Thursday, 27 June 2024 16:00 - 17:30 Heliconia 3503

11I: Communications in Specialized Environments

- 1 A Maritime Multi-User GBSM for Land-to-Ship Communications**
Su Pingfan, Southeast University; Hengtai Chang, Purple Mountain Laboratories; Cheng-Xiang Wang, Yilin Ma, Jie Huang, Southeast University; Yubei He, Durham University
- 2 A Novel 3D GBSM for 6G Satellite-UAV-Ground Wireless Communications**
Zayyad Haleed, Xichen Mao, Jie Huang, Cheng-Xiang Wang, Southeast University
- 3 Incremental Deployment of Base Stations for Optimal Overlap Coverage in Urban Environments**
Jingyu Lyu, Southeast University; Songjiang Yang, Yinghua Wang, Purple Mountain Laboratories; Xichen Mao, Cheng-Xiang Wang, Jie Huang, Southeast University
- 4 Modeling Ambient Light in Stratified Waters for Underwater Optical Wireless Communication**
Tharuka Govinda Waduge, Boon-Chong Seet, Kay C. Vopel, Auckland University of Technology
- 5 Wireless Channel Measurements, Characterization, and Comparisons in Aircraft Cabin at 28 GHz, 38 GHz and 130 GHz**
Xi Liao, Hao Tang, Wang Yang, Chongqing University of Posts and Telecommunications; Yi Chen, Ziming Yu, Wang Guangjian, Huawei Technologies

Thursday, 27 June 2024 16:00 - 17:30 Heliconia 3504

11J: Heterogeneous Networks II

- 1 An Improved SB-SPS Scheme with Low Transmission Delay for Relay Transmission in Vehicle Platooning with C-V2X Sidelink Communication**
Kohei Murata, Kosuke Sanada, Hiroyuki Hatano, Kazuo Mori, Mie University

- 2 Multi-Dimensional Constellation for OTFS-based Vehicular-IoT in Time-Variant Channel**
Ch Santosh Reddy, Debarati Sen, Chetna Singhal, Indian Institute of Technology Kharagpur
- 3 Multi-Scenario Task Scheduling Based on Heterogeneous-Agent Reinforcement Learning in Space-Air-Ground Integrated Network**
Kexin Fan, Bowen Feng, Junyi Yang, Zhikai Zhang, Zhang Qinyu, Harbin Institute of Technology, Shenzhen
- 4 Multi-sided Matching For Space-Air-Ground Integrated Systems**
Abdoul Karim A. H. Saliah, UM6P; Doha Hamza, University of Prince Mugrin; Hajar El Hammouti, UM6P; Jeff S. Shamma, Illinois University; Mohamed-Slim Alouini, KAUST
- 5 Task scheduling algorithm for heterogeneous Computing Power Network**
Guodong He, Xiaohui Li, Siting Lv, Zhou Yuanyuan, ZhiGang Ni, Xingbo Chen, Xidian University

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11K: Privacy and Security

- 1 Charging Ahead: A Hierarchical Adversarial Framework for Counteracting Advanced Cyber Threats in EV Charging Stations**
Mohammed Almeshhar, Abdullatif Albaseer, Mohamed Abdallah, Ala Al-Fuqaha, Hamad Bin Khalifa University
- 2 Evaluating the Impact of Privacy-Preserving Federated Learning on CAN Intrusion Detection**
Gabriele Digregorio, Elisabetta Cainazzo, Stefano Longari, Michele Carminati, Stefano Zanero, Politecnico di Milano

- 3 RIS-Assisted Integrated Sensing and Communication System With Physical Layer Security Enhancement by DRL Approach**
Peng Jiang, Xiaowen Cao, Yejun He, Shenzhen University; Xianxin Song, Zhonghao Lyu, The Chinese University of Hong Kong, Shenzhen
- 4 Spoofing Detection in the Physical Layer with Graph Neural Networks**
Tien Ngoc Ha, Daniel Romero, University of Agder
- 5 On the Secrecy of SWIPT Systems: An Amount of Confusion Loss Perspective**
Soleha Kousar, Ajay Singh, Indian Institute of Technology Jammu

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11L: Positioning

- 1 A Self-Supervised Approach for Cooperative Neighboring Vehicle Positioning System based on Spatial-Temporal Learning Techniques**
Mei-Qi Huang, Hsin-Yuan Chang, National Tsing Hua University, Taiwan, R.O.C.; Chih-Yu Wang, Academia Sinica; Wei-Ho Chung, National Tsing Hua University, Taiwan, R.O.C.
- 2 Cooperative Source Positioning Based on 1D AOA and Depth Measurements: A Closed-form Solution**
Yonghua Chen, Hua Yu, Yuanyuan Ou, Jie Li, Fei Ji, South China University of Technology
- 3 Enhanced Weighted K-nearest Neighbour Positioning**
Xinze Li, Hanan Al-Tous, Aalto University; Salah Eddine Hajri, Huawei Technologies CO. LTD.; Olav Tirkkonen, Aalto University
- 4 WiFi Positioning with Mobility-Induced Graphs**
Kyuwon Han, Yonsei University; Seung Min Yu, Korea Railroad Research Institute; Seong-Lyun Kim, Yonsei University; Seung-Woo Ko, Inha University

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4Va: Antenna Systems, Propagation, and RF Design

- 1 300 GHz propagation loss estimation method for BAN assuming walking behavior**
Kazuki Takezawa, Satoshi Ito, KDDI Research, Inc.; Takahiro Hayashi, KDDI Research Inc.
- 2 First-Fresnel-Zone Based Path Loss Estimation for IRS-Assisted Millimeter Wave Communications**
Hiroki Aoki, Satoshi Ito, Takuya Ohto, KDDI Research, Inc.; Takahiro Hayashi, KDDI Research Inc.
- 3 Flexible Secondary Beamforming Using Holographic Meta-Surfaces for Multi-Mode Vortex Beam Transmission in Wireless Communications**
Yufei Zhao, Nanyang Technological University; Ziyang WANG, Xinyu XUE, Beihang University; Afkar Mohamed Ismail, Xiaoyan MA, Guan Yong Liang, Nanyang Technological University
- 4 Propagation Path-Informed High-Generalization Path Loss Model for Unknown Region Estimation**
Satoshi Ito, Takahiro Hayashi, KDDI Research, Inc.
- 5 Ultra-low Altitude Channel Measurement in Riverside Environments at 1.4 GHz**
Bin Li, Northwestern Polytechnical University; Renjie Li, Jiakang Yan, Northwest Polytechnic University

- 6 Analysis of Spatial Non-Stationary Characteristics for 6G XL-MIMO Communication**
Weirang Zuo, Pan Tang, Haiyang Miao, Qi Wei, Tian Lei, Zhang Jianhua, Beijing University of Posts and Telecommunications; Guangyi Liu, China Mobile; Mengnan Jian, ZTE Corporation
- 7 Measurement-based Analysis of XL-MIMO Channel Characteristics in a Corridor Scenario**
Qi Wei, Pan Tang, Beijing University of Posts and Telecommunications; Haiyang Miao, Weirang Zuo, Tian Lei, Zhang Jianhua, Beijing University of Posts and Telecommunications; Guangyi Liu, China Mobile Research Institute; Mengnan Jian, ZTE Corporation
- 8 Correlation-based Channel Measurement and Link-Level Analysis for THz Picocells on a University Street**
Yuanbo Li, Yiqin Wang, Shanghai Jiao Tong University; Zhi Chen, University of Electronic Science and Technology of China; Yi Chen, Huawei Technologies Co., Ltd; Ziming Yu, Huawei Technology Company; Chong Han, Shanghai Jiao Tong University

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4Vb: Emerging Technologies, 5G and Beyond

- 1 Stacked Intelligent Metasurface Enabled Near-Field Multiuser Beamfocusing in the Wave Domain**
Xing Jia, University of Electronic Science and Technology of China (UESTC); Jiancheng An, Nanyang Technological University; Hao Liu, Lu Gan, University of Electronic Science and Technology of China; Marco Di Renzo, CentraleSupélec, Paris-Saclay University; M'erouane Debbah, KU 6G Research Center, Khalifa University of Science and Technology; Chau Yuen, Nanyang Technological University

- 2 AoI-Based Coded Hybrid Automatic Repeat Request Strategy for Non-Terrestrial Networks**
Ruopu Du, Bowen Feng, Yi Yang, Zhang Qinyu, Harbin Institute of Technology, Shenzhen
- 3 D2D Communications with Energy Harvesting: An Optimal Secrecy Throughput Perspective**
Ajay Singh, IIT Jammu, Surjeet, Kumar
- 4 Primary Rate Maximization in Movable Antennas Empowered Symbiotic Radio Communications**
Bin Lyu, Hao Liu, Wenqing Hong, Nanjing University of Posts and Telecommunications; Shimin Gong, Sun Yat-sen University; Feng Tian, Nanjing University of Posts and Telecommunications
- 5 Spectral Efficiency Maximization for Probabilistic Semantic Communication with Rate Splitting**
Zhouxiang Zhao, Zhaohui Yang, Zhejiang University; Mingzhe Chen, Princeton University; Xu Gan, Chongwen Huang, Zhejiang University; Yao Sun, University of Glasgow; Qianqian Yang, Zhejiang University; Wei Xu, Southeast University; Zhaoyang Zhang, Zhejiang University
- 6 User Association and Resource Allocation in Large Language Model Based Mobile Edge Computing System over 6G Wireless Communications**
Liangxin Qian, Jun Zhao, Nanyang Technological University
- 7 DragFly: Joint Threat Object Detection And UAV Trajectory Planning in Hostile Environments**
Akkapatch Thouchamongkol, Hong-Yi Chen, Yan-Hao Wang, Quan Tran Dinh Dai, Van-Linh Nguyen, National Chung Cheng University
- 8 Power Consumption Analysis of a Reconfigurable Intelligent Surface for Self-Sustained Operations**
Ammar Rafique, Information Technology University of The Punjab, Lahore, Pakistan; Ahsan Mehmood, Naveed Ul Hassan, Lahore University of Management Sciences; Muhammad Qasim Mehmood, Muhammad Zubair, Information Technology University of The Punjab, Lahore, Pakistan
- 9 Energy Efficiency Optimization of User-Centric Cell-free Massive MIMO System for URLLC Services**
Yige Huang, Yanxiang Jiang, Southeast University; Fu-Chun Zheng, Harbin Institute of Technology (Shengzhen) & The University of York; Pengcheng Zhu, Dongming Wang, Southeast University

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5V: Electric Vehicles, Vehicular Electronics and Intelligent Transportation

- 1 A Data Synchronization Incentive Scheme in Vehicular Digital Twin Network with Stackelberg Game**
Jingru Tan, Xiaoqing Yang, Jinkai Zheng, Tom H. Luan, Xidian University; Longxiang Gao, Qilu University of Technology; Zhou Su, Xi'an Jiaotong University
- 2 Augmented Cross Layer Refinement Network-based Lane Detection in Adverse Weather Conditions**
luoyuechen, Harbin Institute of Technology; Fuxi Wen, Tsinghua University
- 3 A Probabilistic Data Offloading and Pricing Mechanism based on Stackelberg Game for Vehicular Crowdsensing**
Hengrui Cui, Ruoyu Zhang, Xumin Huang, Weifeng Zhong, Guangdong University of Technology
- 4 Coverage Path Planning for AUVs Cooperative Environment Detection in Integrated Underwater Acoustic Communication and Detection Networks**
Yike Wu, Xiaoxiao Zhuo, Liang Tang, Shanghai Institute of Microsystem and Information Technology, CAS; Fengzhong Qu, Zhejiang University; Yu Zhao, Shanghai Institute of Microsystem and Information Technology, CAS; Zhiyong Bu, Shanghai Institute of Microsystem and Information Technology CAS

- 5 Advanced Traffic Demand Generation in SUMO: ML-based Prediction of Flow Rate based on Real-world Measured Datasets**
Anjie Qiu, Prapul Alemada Sathish, RPTU Kaiserslautern-Landau; Donglin Wang, RPTU Kaiserslautern Landau
- 6 Enhancing Cold Start Efficiency: Model Based Performance Analysis of an Integrated Thermal System for Fuel Cell Battery Powertrain with Waste Heat Recovery**
Sonat Arslan, Berk Opuz, Ahmet Furkan Erol, Burhan Özece, Oytun Karaduman, Onur Bar??, AVL Research & Engineering
- 7 LOCUS: Efficient Urban Transportation using Localized Vehicular Coordination**
Chandra Shekhar, Sudipta Saha, Indian Institute of Technology, Bhubaneswar
- 8 Maximization of Profit and Throughput of EV-Charging Station Integrated with PV and ESS**
Ram Mohan Chowdary Kota, Jaishree Mayank, Sanjeet Kumar Nayak, IIITDM Kancheepuram
- 9 Precoding Design for Coordinated Multicast and Unicast Transmission in C-V2V Massive MIMO With Imperfect CSI**
Xinxin Niu, Li You, Southeast University; Anan Lu, Southeast University, Nanjing, China; Xiqi Gao, Southeast University
- 10 Prioritized Task Offloading in Vehicular Edge Computing Using Deep Reinforcement Learning**
Ashab Uddin, Ahmed Hamdi Sakr, Ning Zhang, University of Windsor
- 11 Resilient Post-Disaster Rescue Framework Using Mobile and Connected Electric Vehicles**
Yang Zheng, Nan Chen, Tennessee Tech University; Miao Wang, University of North Carolina at Charlotte
- 12 Resource Allocation in Large Language Model Integrated 6G Vehicular Networks**
Chang Liu, Jun Zhao, Nanyang Technological University
- 13 Route Optimization for Increased EV-to-EV Charging Profitability and Efficiency**
Shoroq Alaskar, Mohamed Younis, University of Maryland
- 14 Spatio-temporal Coordinated Mobile Electric Vehicle Charging in Integrated Transportation and Distribution Systems**
Miao Wang, Ran Zhang, University of North Carolina at Charlotte; Tianyue Zang, Stanford University
- 15 A High-resolution Ultrasonic Environmental Sensing Scheme for Indoor Automated Guided Vehicle Obstacle Avoidance**
Yao Zhiwei, University of Tsinghua
- 16 A Low-Rank Approach of MIMO Optimization for Edge Smart Ports**
Zechen He, Jiale Wang, Ping Feng, Jiahong Ning, Tingting Yang, Dalian Maritime University
- 17 Universal IMU-Centric Spatiotemporal Calibration Algorithm for Heterogeneous Information**
Yangfang Shi, Baowang Lian, Northwestern Polytechnical University; Yonghong Zeng, Institute for Infocomm Research; Yugang MA, Institute for Infocomm Research, A-STAR; Yangyang Liu, Northwestern Polytechnical University
- 18 Effect of oxygen excess ratio on the performance of a hybrid fuel cell system**
Ali Moslehi, Mohsen Kandidayeni, Marie Hébert, Sousso Kelouwani, University du Québec à Trois-Rivières
- 19 Reliable Federated Learning in Vehicular Communication Networks: An Intelligent Vehicle Selection and Resource Optimization Scheme**
Tongzhou Yang, Qihao Li, Jilin University; Ning Zhang, University of Windsor; Linlin Zhao, Fengye Hu, Jilin University

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6V: IoV, IoT, M2M, Sensor Networks, and Ad-Hoc Networking

- 1 A DRL-based Server Selection Scheme for IoT Federated Learning in Sparse LEO Satellite Constellations**
Pengxiang Qin, Dongyang Xu, Xi'an Jiaotong University; Chinmay Chakraborty, Birla Institute of Technology; Osama Alfarraj, King Saud University; Keping Yu, Hosei University; Mohsen Guizani, Qatar University
- 2 Performance Analysis of UAV-Assisted Sensor Networks for Emergency Scenarios**
Saud Althunibat, Texas A&M University at Qatar; Mohammad Taghi Dabiri, Mazen O. Hasna, Qatar University; Khalid Qaraqe, TAMU
- 3 Performance of MAC Layer Mechanisms in DECT-2020 NR mMTC Technology**
Andrey Samuylov, Dmitri Moltchanov, Tampere University; Mirza Alam, Juho Pirskanen, Jussi Numminen, Wirepas Oy; Yevgeni Koucheryavy, Mikko Valkama, Tampere University
- 4 Proactive Adaptation of Data Rate in Mobile LoRa-based IoT Devices using Machine Learning**
Laura Acosta García, University of Cartagena; Juan Aznar Poveda, University of Innsbruck (UIBK); Antonio-Javier García-Sánchez, Joan García Haro, Universidad Politécnica de Cartagena; Thomas Fahringer, University of Innsbruck (UIBK)
- 5 Q-learning Based mmWave Beam Adjustment for Joint Communication and Sensing Under IoV Wireless Networks**
Tao Yue, Li Yan, Xuming Fang, Southwest Jiaotong University; Yi Li, China Academy of Railway Sciences; Qing Xue, Chongqing University of Posts and Telecommunications
- 6 Real Time Vehicle Identification: An IoT-Assisted Approach**
Chandra Shekhar, Manish Kausik H, Sudipta Saha, Indian Institute of Technology, Bhubaneswar

7 Secure Key Distribution Scheme in IoT Networks Exploiting Channel State Information

Tasneem Alshamaseen, Hamad Bin Khalifa University; Saud Althunibat, Texas A&M University at Qatar; Marwa Qaraqe, Elmehdi Illi, Hamad Bin Khalifa University

8 Blockchain-based Vehicle-to-Vehicle Energy Trading Mechanism: A Bayesian Game Approach with Mixed Pricing Strategy

Haoxin Chang, Gang Liu, Zheng Ma, Southwest Jiaotong University; Wei Wang, State Key Laboratory of Rail Transit Engineering Informatization

9 Multi-AUV Collaborative Data Collection and Trajectory Planning in Integrated Sensing and Communication for Underwater Acoustic Networks

Tianhao Hu, Xiaoxiao Zhuo, Liang Tang, Zhanya Li, Wenkai Lu, Shanghai Institute of Microsystem and Information Technology, CAS; Fengzhong Qu, Zhejiang University

10 TRDS-Net: A Resource-Efficient and Lightweight Convolutional Neural Network Model for Digit Recognition

Zhiheng Kong, Wensong Liao, Jiahui Mao, Chong Tan, Hong Liu, Min Zheng, Shanghai Institute of Microsystem and Information Technology CAS

11 Performance Analysis of Chaotic Phase Transformation for NB-IoT Uplink

Rishita S. Nambur, Naveen Mysore Balasubramanya, V. Shrikanth, Indian Institute of Technology Dharwad

12 Stackelberg Differential Game Based Resource Allocation in Drone-Enabled Mobile Network With Blockchain Integration

Die Wang, Yunjian Jia, Liang Liang, University of Chongqing

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7V: Machine Learning and AI for Communications

- 1 RF2LiDAR: Enabling Digital Twin Using MIMO RF Signals**
Shubham Khunteta, Yeswanth Reddy Guddeti, Samsung R&D Institute-Bangalore; Ashok Kumar Reddy Chavva, Samsung; Avani Agrawal, Samsung R&D Institute-Bangalore
- 2 A Deep Learning-Based Spatial Domain Beam Prediction in Massive MIMO System**
Bei Yang, China Telecom Research Institute; Ruishen Yang, Delft University of Technology; Xin Liang, Beijing University of Posts and Telecommunications; Ziyang Zhang, Peng Chen, China Telecom Research Institute
- 3 Adversarial Attacks Targeting Point-to-Point Wireless Networks**
Ahmad Ghasemi, University of Massachusetts Amherst; Majid Moradikia, Seyed A. Zekavat, Worcester Polytechnic Institute; Hossein Pishro-Nik, University of Massachusetts, Amherst
- 4 AI Based Low Complexity Design for Digital Pre-distorter for Next Generation Wireless Systems**
Shubham Khunteta, Samsung R&D Institute-Bengaluru, India; Avani Agrawal, Samsung R&D Institute-Bangalore; Seungil Park, Ashok Kumar Reddy Chavva, J. Jang, Suhwook Kim, Samsung
- 5 Distributed Unknown Specific Emitter Identification based on Federated Learning**
Hongyujie Xiao, Southwest Jiaotong University; Heng Liu, Key Lab of Information Coding and Transmission; Yi Zhou, Liu Yang, Zheng Ma, Southwest Jiaotong University

6 Fast Best Beam Prediction and Overhead Reduction for 6G Networks: A Deep Learning Approach

Jalal Jalali, JuliaSpace; Juan Roa, Futurewei Technologies; Yifei Song, Virginia Tech; Renjian Zhao, Baoling Sheen, Futurewei Technologies

7 Hybrid Beamforming for Millimeter Wave Relay Systems: A Deep Unfolding Approach

Zhen Luo, Southwest University; Xinyu Wang, Fu Xie, Hongqing Liu, Chongqing University of Posts and Telecommunications

8 Robust Clustered Federated Learning Against Malicious Agents

Sisui Ngoh, Singapore University of Technology and Design; Abhishek Pal Majumder, University of Reading; Lingjie Duan, Singapore University of Technology and Design

9 Visual Sensing-Based Path Loss Prediction Method

Yixuan Tian, Yutong Sun, Li Yu, Zhang Jianhua, Yuxiang Zhang, Beijing University of Posts and Telecommunications; Guangyi Liu, China Mobile

10 Adaptive Neural Network for Eigen-Decomposition of Multi-dimensional Channel Kernels

Iresha Amarasekara, Zhibin Zou, Aveek Dutta, University at Albany SUNY

11 Delay-Doppler Channel Estimation in DZT-OTFS via Deep Learning in Time-Frequency Domain

Sandesh Rao Mattu, A Chockalingam, Indian Institute of Science

12 Intelligent Reflecting Surface Aided Mobile Edge Computing with Rate-Splitting Multiple Access

Yinyu Wu, University of Chinese Academy of Sciences; Xuhui Zhang, Huijun Xing, Chinese University of Hong Kong, Shenzhen; Weilin Zang, Shuqiang Wang, Yanyan Shen, Shenzhen Institutes of Advanced Technology, CAS

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8Va: Positioning, Navigation, and Mobile Satellite Systems

- 1 Drone Propeller Speed Measurement: Case Study using 5GHz RF and mmWave Radar**
Heba Awad, Julie A McCann, Imperial College London
- 2 Real-Time UWB and IMU Fusion Positioning System for Urban Rail Transit with High Mobility**
Rongjing Wang, Hanli Jiang, Qianqian Zhang, Gang Liu, Southwest Jiaotong University; F. Richard Yu, Carleton University, Canada
- 3 GVIL: Tightly Coupled GNSS-Visual-Inertial-Lidar for Position Estimation in Challenging Environments**
Yangfang Shi, Baowang Lian, Northwestern Polytechnical University; Yonghong Zeng, Ernest Kurmiawan, Institute for Infocomm Research; Yugang MA, Institute for Infocomm Research, A-STAR
- 4 RIS-Aided User Localization Design with Multiple Signal Classification based Orthogonal Subspace Projection**
Wanning Meng, University of Shandong; Zheng Dong, Shandong University; Yong Zhou, ShanghaiTech University; Lei Li, Aerospace System Engineering Shanghai; Zhi Liu, Shandong University

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8Vb: Signal Transmission and Reception

- 1 Information Freshness of a Relay Priority Transmission System**
李月, 西北师范大学; 贾向东, Northwest Normal University; 郭宇新, 西北师范大学
- 2 Off-Grid DOA Estimation Algorithm Based on Expanded Matrix and Matrix Pencil**
Xuruoyang Jin, Haotian Chen, Chunyi Song, Zhiwei Xu, Zhejiang University; Guoyu Cui, Changyou Men, Quan Sun, Vango Technologies
- 3 A Parallel ADMM Approach for PAPR Reduction in Mixed-Numerology Systems**
Yuhang Zhou, Jiaxuan Li, Xiaoran Liu, Jun Xiong, Haitao Zhao, National University of Defense Technology

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9Va: Radio Access Technology and Heterogeneous Networks

- 1 An Adaptive Coded Caching Scheme for Time-Varying Channels**
Mirna Haidar, Lebanese University, Saint Joseph University; Yasser Fadlallah, University of Science and Arts in Lebanon, USA; Hadi Edmond Sawaya, Saint Joseph University, Lebanon; Abed Ellatif Samhat, Lebanese University
- 2 Improved Design of Resource Hopping based Multiple Access for Grant-free Random Access in 6G mMTC System**
Wanyue Zhang, Beijing Jiaotong University, China; Guangkai Li, National Computer Network Emergency Response Technical Team; Guoyu Ma, Yiyang Ma, Beijing Jiaotong University; Wanqiao Wang, China Electric Power Research Institute; Botao Feng, Bo Ai, Beijing Jiaotong University
- 3 Interference Avoidance in Hotspot Areas for Cell-Free Millimeter-Wave Massive MIMO Systems**
Shihao Zhu, Junhui Liu, Ming Zhao, Zhou Wuyang, University of Science and Technology of China
- 4 Variational Bayesian Inference-Based Joint Active User Detection and Channel Estimation in Cell-free Massive MIMO**
Junhui Liu, Shihao Zhu, Ming Zhao, Zhou Wuyang, University of Science and Technology of China
- 5 RIS-Aided MU-NOMA Systems with Imperfect CSI and Generalized Hardware Impairments**
Qian Zhang, Guanghui Luo, Ju Liu, Zheng Dong, Yunxiao Li, Shandong University

4 Earliest Partial Relay Synchronous Cooperation Scheme for Multi-Relay IoT System with the Tradeoff of AoI, Energy Efficiency and Throughput

- ???, Xiaoping Ma, Northwest Normal University; Junyan Wang, Sun Yat-sen University; Xianghua Han, Northwest Normal University
- 5 Impact of Pointing Errors on the Performance of IRS-Assisted Multi-User THz-NOMA**
Khaled Altuwairgi, Ahmad Massud Tota Khel, Han Wen, Khairi Hamdi, University of Manchester
 - 6 Joint Multi-User Grouping and AP Switch On/Off for Energy-Efficient Cell-Free Massive MIMO**
Masaaki Ito, Issei Kanno, Yoji Kishi, KDDI Research, Inc.; Wei Yu Chen, Andreas F. Molisch, University of Southern California
 - 7 Low-Complexity Frequency Invariant Beamformer Design Based on SRV-Constrained Array Response Control**
Zihao Teng, Huaguo Zhang, University of Electronic Science and Technology of China; Jiancheng An, Nanyang Technological University; Lu Gan, University of Electronic Science and Technology of China; Hongbin Li, Stevens Institute of Technology; Chau Yuen, Nanyang Technological University
 - 8 Opportunistic Quantization for Fronthaul Overhead Reduction in Beyond 5G Distributed Base Stations**
G. D. Surabhi, Shruti Venkatesh, Bharath Shamasundar, Samsung R&D Institute - Bangalore; Ashok Kumar Reddy Chavva, Samsung
 - 9 Performance Analysis of VLC Systems under Pulse Jamming and Random User Location**
Aashish Mathur, Indian Institute of Technology Jodhpur
 - 10 Performance Evaluation of DCSK-Based PLC Systems Under Pulse Jamming**
Vinay Mohan, Aashish Mathur, Indian Institute of Technology Jodhpur
 - 11 Mobile Molecular Communication with Relay Assisted Network Coding: Framework and Analysis**
Arjav Praveen Jain, Prateek Mukherjee, Sandeep Joshi, Birla Institute of Technology and Science Pilani

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9Vb: Recent Results - Virtual

- 1 Distributed Bayesian Sparse Signal Recovery Algorithm with Minimal Communication Load in Networks**
Mudassir Masood, King Fahd University of Petroleum and Minerals
- 2 Offloading and Quality Control for AI Generated Content Services in 6G Mobile Edge Computing Networks**
Yitong Wang, Chang Liu, Jun Zhao, Nanyang Technological University
- 3 Orchestration of Emulator Assisted 6G Mobile Edge Tuning for AI Foundation Models: A Multi-Agent Deep Reinforcement Learning Approach**
Wenhao Yu, Terence Jie Chua, Jun Zhao, Nanyang Technological University
- 4 Outage Probability of Wireless Powered Cooperative NOMA over Fluctuating Two-Ray Fading**
Pawan Kumar, Aryan, National Institute of Technology Rourkela; Kalpana Dhaka, IIT Guwahati
- 5 Secure and Energy-Efficient Mobile Edge Computing with UAV-Mounted-RIS Assistance**
Ali A. Nasir, King Fahd University of Petroleum and Minerals
- 6 The Convergence of Artificial Intelligence Foundation Models and 6G Wireless Communication Networks**
Mohamed Reda Shoeib, Wang Zefan, Jun Zhao, Nanyang Technological University
- 7 Universal Black-Box Adversarial Attacks on Deep Learning Models for Specific Emitter Identification**
Kailun Chen, Yibin Zhang, Nanjing University of Posts and Telecommunications; Zhenxin Cai, Nanjing University; Yu Wang,

Chen Ye, Nanjing University of Posts and Telecommunications; Yun Lin, Harbin Engineering University; Guan Gui, Nanjing University of Posts and Telecommunications

8 A Configurable Deep Learning-based Architecture for NPRACH Reception

Yashwanth Ramesh Kumar, Technical University of Munich, Munich, Germany; Naveen Mysore Balasubramanya, Indian Institute of Technology Dharwad

9 Exploring Live Payload Migrations for MTD in Microservices Architecture

Anthony Mamaril, Rinchen Kolodziejczyk, ZHAW; Wissem Soussi, ZHAW, UZH; Gurkan Gur, Zurich University of Applied Sciences

10 Optimizing Time Scheduling for Hybrid OMA-NOMA Systems under Imperfect SIC: An α -fair Utility Approach

Siva Mouni Nemaalidinne, Indian Institute of Technology Hyderabad; Pranay Agarwal, IIT Bombay; Yoghitha Ramamoorthi, NTT Japan; Abhinav Kumar, Indian Institute of Technology Hyderabad

11 BER Analysis of IRS Aided OTFS Modulation in Presence of IQ Imbalance at the Receiver

Sanjeet Kumar Bhagat, IIT Bhubaneswar; Sapta Girish, Bharat Electronics Limited; Pravas Ranjan Sahu, Indian Institute of Technology Bhubaneswar

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10Va: Spectrum Management, Green Communications, Services and Security

1 Applying Evolutionary Algorithms for Cell Switch-Off to Reduce Network Energy Consumption

Jesús Galeano-Brajones, University of Extremadura; Carlos Pupiales, Aalborg University; Daniela Laselva, Nokia; Javier Carmona-Murillo, University of Extremadura; Francisco Luna, University of Málaga

2 Security of RIS-Aided Energy Harvesting Based D2D Communications in Cognitive Cellular Network

K. Sree Venkateswara Rao, Indian Institute of Technology, Jammu; Ajay Singh, IIT Jammu

3 Seeing is Believing: A Federated Learning Based Prototype to Detect Wireless Injection Attacks

Aadil Hussain, Nitheesh Gundapu, Sarang Drugkar, Suraj Kiran, IIT Delhi; Harshan Jagadeesh, IIT Delhi, India; Ranjitha Prasad, Indraprastha Institute of Information Technology Delhi

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10Vb: Unmanned Aerial Vehicle Communications, Vehicular Networks, and Telematics

1 Energy-efficient UAV-BS-coordinated Data Collection for Wireless Sensor Networks of High-speed Railways

Junkai Wang, Li Yan, Xuming Fang, Southwest Jiaotong University; Qing Xue, Chongqing University of Posts and Telecommunications; Yi Li, China Academy of Railway Sciences

2 Energy-Oriented Offloading Decision and Multidimensional Resource Allocation for UAV-Assisted Edge Computing Systems

Fang Ye, Weibo Hao, Jingchuan Zhang, Yibing Li, Harbin Engineering University

3 Optimizing UAV-Assisted FANETs: Reliability in Multihop Routing over Rician Fading Channels

Payal Mittal, Santosh Shah, Anirudh Agarwal, The LNM Institute of Information Technology, Jaipur; Deepak Mishra, University of New South Wales (UNSW) Sydney

4 Outage Probability Analysis for D2D-based Multi-antenna V2V Underlay System

Kalpna Dhaka, Indian Institute of Technology Guwahati

5 UAV Path Planning for Surveillance Applications: Rotary-Wing vs. Fixed-Wing UAVs

Bahareh Jafari, University of Massachusetts Amherst; Hamid Saedi, UDST and Tarbiat Modares University; Hossein Pishro-Nik, University of Massachusetts, Amherst

6 Dynamic Environment-Adaptive UAV-Assisted Integrated Sensing and Communication

Keyi Cheng, Xiamen University

7 Evaluating Position Prediction Methods for High Speed UAV based Flying Ad Hoc Networks

Guowen Hu, Chongqing University of Technology; Wei Liu, Chongqing University of Technology; Ming Xu, Yu Xia, Nanjing University of Aeronautics and Astronautics; Jing Mao, Chongqing University of Technology; Cheng Xu, Nanjing University of Aeronautics and Astronautics; Shunren Hu, Chongqing University of Technology; Daqing Huang, Nanjing University of Aeronautics and Astronautics

8 Optimized Control-Centric Communication in Cooperative Adaptive Cruise Control Systems

Mahdi Razzaghpour, Shahriar Shahram, Rodolfo Valiente, University of Central Florida; Mahdi Zaman, Univ. of Central Florida; Yaser P. Fallah, University of Central Florida

9 TRIMO: An Efficient Multimodal Misbehavior Detection Model in Vehicular Networks

Van-Linh Nguyen, National Chung Cheng University, Taiwan; Lan-Huong Nguyen, National Chung-Cheng University; Wen-Pin Liu, Hao-En Ting, Xuan-Zhang Hu, National Chung Cheng University

10 UAV-Enabled D2D Vehicular Communication Network: Link Selection and Outage Analysis

Arjav Praveen Jain, Birla Institute of Technology And Science, Pilani; Sandeep Joshi, Birla Institute of Technology and Science Pilani, India

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11V: Wireless Networks: Protocols, Security and Services

1 Navigating Connected Car Cybersecurity: Location Anomaly Detection with RAN Data

Feng Wang, Syracuse University; Yaron Koral, Kenichi Futamura, AT&T Laboratories

2 QoS-Optimized Deployment of Mobile Relay AUVs in Underwater Acoustic Sensor Networks

Fang Ye, Hengyu Xu, Yibing Li, Tao Jiang, Zitao Zhou, Harbin Engineering University

3 Toward Steady Video Content Delivery for High-Spend Vehicles

Xinchang Zhang, Shandong Normal University

4 A Multi-link Based Seamless Handoff Scheme for Next Generation Wi-Fi Networks

马聪, 西南交通大学; Li Yan, Rong He, Xuming Fang, Southwest Jiaotong University; Liuming Lu, Chaoming Luo, Guangdong OPPO Mobile Telecommunications Corp

5 Detecting Location Spoofing Attacks using Multiple Angle of Signal Arrivals in MM-Wave Vehicular Networks

Chandana Sai Thondebhavi Shanthakumar, California State University, Sacramento; Aishwarya Chawariya, Intel Corporation; Yuan Cheng, Grand Valley State University; Mohammed E. Eltayeb, California State University, Sacramento

6 Environment-Aware Codebook for RIS-Assisted MU-MISO Communications: Implementation and Performance Analysis

Zhiheng Yu, University of Electronic Science and Technology of China; Jiancheng An, Nanyang Technological University; Lu Gan,

University of Electronic Science and Technology of China; Chau Yuen, Nanyang Technological University

- 7 Evaluation of 5G Train Neutral Host Architecture for Future 5G Railway Communications**
Ali El Amine, IRT Saint Exupery; Jad Nasreddine, Martin Trullenque, i2CAT Foundation; Luca Petrucci, Axbryd; Philippe Veysiere, IRT Saint Exupery; Nuria Trujillo, Hispasat; Francisco Vázquez-Gallego, Daniel Camps-Mur, i2CAT Foundation

- 8 Site-specific Deployment Optimization of Intelligent Reflecting Surface for Coverage Enhancement**
Dongsheng Fu, University of Xiamen; Xintong Chen, Xiamen University; Jiangbin Lyu, National University of Singapore; Liquan Fu, Xiamen University
- 9 Switching MAC Protocols for UAV Networks in Tactical Scenario**
Qingnan Sun, Nanjing University of Aeronautics and Astronautics

Workshops

Monday, 24 June 2024 9:00 - 10:30 Heliconia 3406

W1: 1st Workshop on Real-Time Communications toward 6G (WRTC)

- 1 AoI-Aware Adaptive Access and Bandwidth Allocation in IIoT with Mixed Traffic and Finite Blocklength**
Zhekang Zhou, Harbin Institute of Technology; Jie Cao, Harbin Institute of Technology, Shenzhen; Xu Zhu, Harbin Institute of Technology (Shenzhen)
- 2 Coding-Shaping Concatenation for Probabilistic Shaping**
Yanan Luo, Beihang university; Qin Huang, Beihang University
- 3 Joint Resource Allocation For Multiplexing eMBB, URLLC and mMTC Traffics based on DRL**
Rong Ren, Southeast University; Jie Wang, southeast university of China; Jingming Yu, Southeast University

Monday, 24 June 2024 Virtual

W2: 4th Workshop on Holographic MIMO Communications

- 1 Max-Min Rate Optimization for Group-Transmissive RIS-Based Transmitter Architectures**
Hao Cheng, Jingran Huang, Zhengzhou University; Guangping Li, China Communications Construction Group Design Institute; Fang Wang, Wanming Hao, Zhengzhou University; shouyi yang, zhengzhou university

Monday, 24 June 2024 14:00 - 17:30 Heliconia 3406

W3: 5th International Workshop on Decentralized Technologies and Applications for IoT (D'loT) 2024

- 1 5G Integrated Access and Backhaul: Performance Analysis of Congestion Control in 3GPP**
Haojin Li, Research & Development Center Sony (China) Limited, Beijing, China; Chen Sun, Tao Cui, Sony R&D Center China; Shuo Wang, Sony (China) Limited
- 2 A Novel BIBO Automated Ticketing System Based on Blockchain Mobile Sensors for Public Transport Modes**
Abdullah Lakhan, Tor-Morten Grønli, Sajida Memon, Kristiania University College
- 3 AoI-based Temporal Graph Attention Network for Content Update**
Fan Jiang, Wei Wang, Lei Liu, Yongzhi Zhai, Xi'an University of Posts and Telecommunications; Haoyi Wang, Southwest University
- 4 Blockchain and IoT Synergy in Healthcare: Bibliometric Analysis**
Muhammad Irfan Younas, Sukkur IBA University; Muhammad Jawed Iqbal, ISST, University of Karachi, Pakistan
- 5 Defense via Behavior Attestation against Attacks in Connected and Automated Vehicles based Federated Learning Systems**
Godwin Badu-Marfo, Toronto Metropolitan University; Ranwa Al Mallah, Royal Military College of Canada; Bilal Farooq, Toronto Metropolitan University

6 Edge Computing QoE Maximization in EV Parking Scenario

Yu Chieh Lee, National Taiwan University

7 Hierarchical Deep Learning Framework for Enhanced UAV Classification Mitigating Bluetooth and WiFi Interference

Chanchal Kumari, Nelapati Lava Prasad, IIT Bhubaneswar; Udit Satija, IIT Patna; Barathram Ramkumar, Indian Institute of Technology Bhubaneswar

8 Hybrid MI and RIS-Assisted Acoustic Communication for Channel Capacity Maximization in AUV-Based UWAC System

Zhiyi Hu, Yisheng Zhao, Chaohua Song, Peng Liu, Tengting Li, Fuzhou University

Monday, 24 June 2024 Virtual

W4: 6G-empowered Robotic Vehicles for Sustainable Development (VeSUS)

- 1 CoSPAM: Multi-Robot Collaboration Simultaneous Path Planning and Semantic Mapping**
Kai Hu, Southern University of Science and Technology; Longhao Zou, Jun Jiang, Peng Cheng Laboratory, Department of Broadband Communication; Gabriel-Miro Muntean, Dublin City University
- 2 Performance Analysis of Acoustic RIS-Assisted Wireless Underwater Communications**
Yangzhe Liao, Ningna Zhai, Yuanyan Song, Yi Han, Ning Xu, Wuhan University of Technology
- 3 A Survey on Multi-Agent Reinforcement Learning Applications in the Internet of Vehicles**
Elham Mohammadzadeh Mianji, Mohammad Fardad, Gabriel-Miro Muntean, Irina Tal, Dublin City University
- 4 Machine Learning based Driver Emotion Monitoring for Vehicular IoT**
Feng Xiao, Ze Xu, Yi Han, Yi Zhong, Yi Zheng, Mingxi Liao, Poshi Qin, Yuan Wan, Wuhan University of Technology

Monday, 24 June 2024 14:00 - 17:30 Heliconia 3402

W5: 8th Workshop on Connected Intelligence for IoT and Industrial IoT Applications- C3IA

- 1 Federated Reinforcement Learning-based Power Control for Next-Generation Wi-Fi Spatial Reuse**
Jing Wang, SouthWest JiaoTong University; Xuming Fang, Southwest Jiaotong University
- 2 A Cascaded Multi-IRS-assisted Signed Quadrature Spatial Modulation System**
Taissir Elganimi, University of Tripoli; Khaled Rabie, Manchester Met University; Ammar Abu-Hudrouss, Islamic University of Gaza
- 3 Multi-Agent Deep Reinforcement Learning based Multi-Objective Resource Optimization in a Distributed Manufacturing System**
Xinchang Shen, Chen-Khong Tham, National University of Singapore

4 Efficient Hardware Acceleration of Spiking Neural Networks using FPGA: Towards Real-Time Edge Neuromorphic Computing

Soukaina El Maachi, Hassania School of Public Works; Saadane Rachid, SIRC/LAGES-EHTP Hassania School of Public Works; Abdellah Chehri, Royal Military College of Canada

5 Building MIMO-SCMA Upon Affine Frequency Division Multiplexing for Massive Connectivity over High Mobility Channels

Qu Luo, JING ZHU, Pei Xiao, Gaojie Chen, University of Surrey; Jia Shi, XiDian University; Chen Lu, Shenzhen Institute of Information Technology

6 Distributed Multi-RIS-assisted GSM-MIMO System with Norm-Based RIS Selection Algorithm

Jannat I. Elgregni, Taissir Elganimi, University of Tripoli; Khaled Rabie, Manchester Met University

Monday, 24 June 2024 9:00 - 12:30 Heliconia 3402

W6: IEEE VTC 2024-Spring International Workshop on 6th Network Softwarization Techniques for IoT Application, NetSoftIoT

1 Random error elimination algorithm of microelectromechanical gyroscope array

Siyuang Liang, Xi'an University of Posts and Telecommunications; Xuguang Li, Xi'an University of Posts and Telecommunications; Guodong Duan, Hunan Vanguard Group Co. Ltd

2 Securing NetSoftIoT Environments with Enhanced Attack Detection Using RandomForest and LSTM in SDN

Brij B. Gupta, Asia University, Taichung 413, Taiwan; AKSHAT GAURAV, Ronin institute; Kwok Tai Chui, Hong Kong Metropolitan University (HKMU), Hong Kong; Varsha Arya, Asia University, Taichung, Taiwan; Jinsong Wu, Universidad de Chile

3 Application of IPv6 protocol conformance test in 5G visual inspection robot system

Ke Lu, Zhipeng Zhang, Nanjing Vocational Institute of Mechatronic Technology; Shuyi Wang, Nanhong Jincheng College; Yihuan He, Nanjing Vocational Institute of Mechatronic Technology

4 Task Demand Oriented Lite Edge Communications for IoT

Junying Zhang, Xi'an Jiaotong University; Qinghe Du, Xi'an Jiaotong University; Yijing Ren, King's College London; Shijiao Zhang, Xian Jiaotong University; Hancong Zheng, Xi'an Jiaotong University; Xueyong Wei, Yonghong Qi, State Key Laboratory for Manufacturing Systems Engineering; Yuhao Zhang, Xi'an Jiaotong University

5 Multi-controller Placement in Software Defined Satellite Networks: A Meta-heuristic Approach

Weiwei Jiang, Haoyu Han, Yang Zhang, Beijing University of Posts and Telecommunications; Jianbin Mu, Zhejiang University of Technology

Monday, 24 June 2024 14:00 - 17:30 Heliconia 3403

W7: LPWAN-Based LEO Satellite Communication for 6G: Challenges, Innovations, and Future Directions

1 Synchronization Errors and SINR Performance: How Critical Are They in Cell-Free Massive MIMO with Ultra-Dense LEO Satellite Connectivity?

Reza Mahin Zaeem, SnT, Universite du Luxembourg, Luxembourg; Juan Merlano Duncan, Vu Nguyen Ha, Symeon Chatzinotas, SnT, University of Luxembourg; Bjorn Ottersten, University of Luxembourg

2 Security Enhancement of OTAA based Joining Procedure in LoRaWAN for Satellite Communication

Jay Dave, Birla Institute of Technology & Science Pilani, Hyderabad; Nikumani Choudhury, Birla Institute of Technology and Sciences, Pilani, Hyderabad Campus

3 LoRaWAN Scheduling Mechanism for 6G-based LEO Satellite Communications

Abhijeet Manoj Varma, Nikumani Choudhury, Birla Institute of Technology and Sciences, Pilani, Hyderabad Campus; Jay Dave, Birla Institute of Technology & Science Pilani, Hyderabad; Anakhi Hazarika, BITS Pilani Hyderabad Campus; Dr. Moustafa Nasralla, Prince Sultan University

4 Overlay Satellite-Aerial-Terrestrial Networks with SWIPT and Solar Battery-Powered A2A Communications

Anuradha Verma, NIT Rourkela, India; Pankaj Kumar Sharma, Pawan Kumar, National Institute of Technology Rourkela

Monday, 24 June 2024 9:00 - 12:30 Heliconia 3403

W8: Radio Map for 6G Communications

1 Location-based Beamforming Design for Multi-layer RIS assisted MIMO

Hanbing Zhang, Jian Wang, Nanjing University; Ying Li, Peng Cheng Laboratory

2 Recovering High-Resolution Fading Patterns from Sparsely Sampled Indoor REMs

Friedrich Burmeister, Anton Krause, Philipp Schulz, Technische Universität Dresden; Gerhard Fettweis, TU Dresden

3 Radio Maps for Beam Alignment in mmWave Communications with Location Uncertainty

Tien Ngoc Ha, Daniel Romero, University of Agder; Roberto López-Valcarce, Universidad de Vigo

4 Deep Machine Learning-based AoD Map and AoA Map Construction for Wireless Networks

Ronghong Mo, singapore institute of technology; Yiyang Pei, SIT - Singapore; Sumei Sun, Institute for Infocomm Research; Neelakantam Venkatarayalu, Benjamin Premkumar, SIT - Singapore

5 On the Construction of Channel Gain Map: Model-Based or Model-Free Approach?

Weina Xie, xiaoli Xu, Zhuoyin Dai, Yong Zeng, Southeast University

6 CKM-Assisted UAV communication design

Ting Wang, Harbin Institute of Technology, Shenzhen; Chiya Zhang, Harbin Institute of Technology

Monday, 24 June 2024 14:00 - 17:30 Heliconia 3404

W9: Smart City Applications facilitated via Wireless Communications

1 Pedestrian Warning: Intelligent Vision Sensor vs. Edge AI with LTE C-V2X in a Smart City

Tao Cui, Zhaoyu Zhang, Chen Sun, Shuo Wang, Haojin Li, Wenqi Zhang, Sony R&D Center China

2 Sensor Fusion for Improved Cooperative Perception in CCAM

Hugo Pinho, Joaquim Ferreira, Instituto de Telecomunicações, Universidade de Aveiro

3 On The Influence of the Communication Delay in Context-Aware Collision Avoidance Systems

Johann Götz, Lars Mathuseck, Lennart Busch, Klaus David, University of Kassel

4 Computer Vision-based Cell Association for mmWave/THz Ultra-dense Networks

Khoa Anh Ngo, Jihoon Moon, Byonhyo Shim, Seoul National University

5 An Architecture for Smart Grids using Information Centric Networking in Advance Metering Infrastructure based on Blockchain

Humma Mansoor, Zahra Siraj, Farwa Waqar, National University of Sciences and Technology, Islamabad, Pakistan

Monday, 24 June 2024 9:00 - 12:30 Heliconia 3404

W10: Technologies and Proof-of-Concept Activities for 6G 2024 (TPoC6G 2024)

- 1 Accurate and Doppler Robust SNR Estimation using Multimodal CNN**
Kosuke Tamura, Chiba University; Shun Kojima, Shinya Sugiura, The University of Tokyo; Jaesang Cha, Chang-Jun Ahn, Chiba University
- 2 Performance of OTFS based UAS-assisted Multi-Hop LEO Satellite Communication System**
Hao Jia, Yuchen Wu, Kazutoshi Yoshii, Pan Zhenni, Shigeru SHIMAMOTO, Waseda University
- 3 6G Simulator using Real Environment Model based on Point Cloud Data**
Koshiro Kitao, Satoshi Suyama, Takahiro Tomie, Nobuaki Kuno, Kiichi Tateishi, Huiling Jiang, NTT DOCOMO, INC
- 4 5G Experimental Trials Using Millimeter-wave and Sub-6 GHz Bands in Manufacturing Factory**
Atsuya Nakamura, Satoshi Suyama, Huiling Jiang, NTT DOCOMO, INC; Shinji Kobayashi, Hiroaki Yamada, OMRON Corp.; Goro Ikeda, Nokia Solutions and Networks Japan G.K.
- 5 Evaluation of Radio Access Technology Using Real-Time Simulator for Sixth-Generation Mobile Communications System**
Kiichi Tateishi, Satoshi Suyama, Huiling Jiang, NTT DOCOMO, INC
- 6 Performance of Color Images Method for Path Loss Estimation in High Frequency Bands**
Takahiro Tomie, Satoshi Suyama, Koshiro Kitao, Nobuaki Kuno, NTT DOCOMO, INC.; Minoru Inomata, Wataru Yamada, Motoharu Sasaki, NTT Corporation
- 7 Analysis of Propagation Channel Characteristics in an Indoor Office Environment at 160 GHz**
Nobuaki Kuno, Koshiro Kitao, Takahiro Tomie, Satoshi Suyama, NTT DOCOMO, INC.; Mitsuki Nakamura, Minoru Inomata, Wataru Yamada, Nippon Telegraph and Telephone Corporation
- 8 Stable and Efficient Inter-Satellite Optical Wireless Communications through Connection of Intersecting Orbits**
Wataru Kato, Yuichi Kawamoto, Nei Kato, Tohoku University; Masayuki Ariyoshi, Kazushi Sugyo, Junichi Funada, NEC Corporation
- 9 Performance Evaluation of MIMO Transmission in Deep Joint Source-Channel Coding**
Shion Inokuma, Yuki Sasaki, Tokyo University of Science; Daisuke Hisano, Osaka University; Yu Nakayama, Tokyo University of Agriculture and Technology; Kazuki Maruta, Tokyo University of Science
- 10 Performance of Terminal-Collaborated MIMO Reception System Leveraging Multiple Decision Results**
Shunya Morimoto, Hayato Sugai, Hidekazu Murata, Yamaguchi University; Daisuke Murayama, NTT Access Network Service Systems Laboratories; Toshiro Nakahira, NTT; Tomoaki Ogawa, NTT Corporation
- 11 Toward O-RAN-based Cell-Free Architecture: Cooperative O-RU/V2X mmWave Beam Tracking**
Sojin Ozawa, Yuki Sasaki, Tokyo University of Science; Jin Nakazato, Manabu Tsukada, The University of Tokyo; Kazuki Maruta, Tokyo University of Science

Monday, 24 June 2024 14:00 - 17:30 Heliconia 3405

W11: Workshop on Mobile-to-Mobile Channel Modeling and Propagation for B5G

- 1 Comparison of Large-Scale Fading Models with RSRP Measurements**
Agnes Fastenbauer, Lukas Eller, Philipp Svoboda, Markus Rupp, TU Wien

2 Slight-Distributed-Scatterer-Based Time-Varying Channel Modeling for Vehicular Environments

Pengqi Zhu, Tongji University; José Rodríguez-Piñero, Xuefeng Yin, Tongji University; Gang Li, SinPro Company; Carlos A. Gutierrez, Universidad Autonoma de San Luis Potosi; Xuyang Li, Sinpro Company

3 Characterization of Quasi-stationarity Regions for V2V channels in Various Driving States

Mingqi Guo, Fan Yu, Yixiao Tong, Yuning Yu, Tongji University; Carlos A. Gutierrez, Universidad Autonoma de San Luis Potosi; José Rodríguez-Piñero, Xuefeng Yin, Tongji University

Monday, 24 June 2024 9:00 - 15:30 Heliconia 3401 A

W12: Workshop on Optical Wireless Communications (OWC'24) for 6G

- 1 A Prospect of Novel Devices for Visible Light Communication in Future 6G Networks Applications**
Xiaoqian Wang, Chuan Yang, Maoyun Chen, China Mobile Research Institute; Chaowen Guan, Lulu Zha, Zhilan Lu, Zhiteng Luo, Fudan University; Liang Xia, Hongjun He, China Mobile Research Institute; Guangyi Liu, China Mobile; Nan Chi, Chao Shen, Fudan University
- 2 Resource Allocation for Cooperative Transmission in Multi-tier VLC Networks with M-QAM and Clipping Distortion**
Yiming Zhou, Nuo Huang, Zhengyuan Xu, University of Science and Technology of China
- 3 On the Design of Wide FoV Angle Diversity Receivers for Vehicle-to-Vehicle VLC**
Alejandro López Barrios, Maximo Morales Cespedes, Universidad Carlos III de Madrid
- 4 Harvested Energy Evaluation of Free-Space Optics RIS-Assisted Ground-HAP-UAV System over Composite Channels**
Hoa T. Le, Thang V. Nguyen, Hien T. T. Pham, Dang The Ngoc, Posts & Telecommunications Institute of Technology
- 5 Update Rate and Dimension Requirements for Reconfigurable Mirror Arrays in Vehicular Visible Light Communication**
Matthias Rüb, Jens Grüber, German Research Center for Artificial Intelligence Kaiserslautern; Christoph Lipps, German Research Center for Artificial Intelligence; Hans D. Schotten, RPTU kaiserslautern-landau
- 6 Few-Mode Fiber-Coupled Indoor Optical Wireless Communication in the Presence of Misalignment**
Jinze Che, Shenjie Huang, University of Edinburgh; Majid Safari, The University of Edinburgh
- 7 Relay-Assisted UOWC-FSO System under Pointing Errors**
Hao Wang, Chedlia Ben Naila, Hiraku Okada, Masaaki Katayama, Nagoya University
- 8 Enhancing Throughput of Optical Wireless Communication by Multi-Branch Dual-stage Cascade Receiver**
Xiao Chen Liu, Eindhoven University of Technology; Jean-Paul M. G. Linnartz, Aleksandar Sevo, Signify Research
- 9 Tracking an LED transmitter by a photodiode receiver using object detection with a rolling shutter camera**
Shota Araki, Yudai Imagawa, Hiroto Uchida, Wataru Chujo, Kentaro Kobayashi, Meijo University