2023 International Conference on
Advanced Sensing and Intelligent Systems

ICASIS2023
Conference Schedule

Kunming, China
April 08-09, 2023
https://www.icasis.org

Spectrum Academy IEEE Compendex on Engineering Village Scopus

Welcome Messages

Dear Colleagues and Friends,

It is a great plea sure and honor to invite you to 2023 International Conference on Advanced Sensing and Intelligent Systems(ICASIS2023) which will take place at the online in ZOOM from 8 to 9 April 2023. We are excited about the opportunities of holding an innovative hybrid conference and reaching a wider audience that a conference can include. Participants from around the world are expected to actively participate in this event.

The theme for this conference is innovating and inspiring the researchers to adopt the outcome for implementation. The objectives of the ICASIS are to bridge the knowledge gap between academia and industry and promote research esteem in advanced sensing and intelligent system. It is expected that researchers will bring new prospects for collaboration across disciplines and gain ideas facilitating novel breakthroughs.

Many thanks go out to the members of the TPC and the Organising Committee for their input and support.

You can expect a very fruitful and enjoyable time during the conference. We look forward to welcoming

you to ZOOM for the ICASIS2023.

Welcome to zoom and enjoy the Conference!

Organizing Committee of ICASIS2023

Committees (Ordered by Last Name)

Technical Program Committees

Prof. Chien-Sing Lee, Sunway University, Malaysia

Dr. Anand Nayyar, Duy Tan University, Vietnam

Prof. Dr. Hanmin Jung, Korea Institute of Science and Technology Information (KISTI), Korea

Prof. Min-Shiang Hwang, Asia University, Taiwan

Dr. Justyna Żywiołek, Czestochowa University of Technology, Poland

Prof. Bin Xue, National University of Defense Technology, Taiwan

Dr. Nadir Bouchama, UbiSys (Ubiquitous Systems), CERIST Research Center, Algeria

Dr. Mona Faraji-Niri, University of Warwick, United Kingdom

Assoc. Prof. SaadIbraheemS. Alhuwaimel, King Saud University, Saudi Arabia

Assoc. Prof. Amine Khaldi, Universite Kasdi Merbah Ouargla, Algeria

Dr. Luigi Borzì,Department of Computer and Control Engineering, Politecnico di Torino, Italy

Assoc. Prof. Habil. Kim Phuc TRAN, University of Lille, France

Prof. Yi Zou, South China University of Technology, China

Assoc. Prof. Hamed Vahdat-Nejad, University of Birjand, Iran

Prof. Dr. Kong Fah Tee, INTI International University, Malaysia

Assoc. Prof. Yufei Gao, Zhengzhou University, China

Dr. Syed Agha Hassnain Mohsan, Zhejiang University, China

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Time Schedule (Beijing Time, UTC/GMT+8)

April 9, 2023 UTC/GMT+8 (Online in ZOOM)		
Speaker's time slot	**Standard Time (Beijing UTC/GMT+8)**	**Presentation Information**
	8:55-9:00 am	**Opening Speech**
Keynote Session 1		
9:00-9:30 AM UTC/GMT+8	**9:00-9:30 am**	**Intelligent IoT and Its Applications** Dr. Hongyang Chen | Zhejiang Lab, China
8:30-9:00 AM UTC/GMT+7	**9:30-10:00 am**	**LoRaWAN Technology: Next Generation Wireless Communication Networks** Dr. Anand Nayyar | Duy Tan University, Vietnam
Invited Session 1		
April 8 19:00-19:30 PM UTC/GMT-7	**10:00-10:30 am**	**Cybersecurity: Emerging Trends and Future Direction** Asso. Prof. HAMed Taherdoost | University Canada West, Canada
	10:30-10:45 am	**Photp&Break**
10:45-11:15 AM UTC/GMT+8	**10:45-11:15 am**	**Improving Metaheuristic Algorithms Using Information Feedback Model** Prof. Gai-Ge Wang | Ocean University of China, China
9:00-9:30 AM UTC/GMT+5:45	**11:15-11:45 am**	**Prospects and Challenges in Industrial Internet of Things (IIoT)** Prof. Sudan Jha | Kathmandu University, Nepal
11:45-12:15 AM UTC/GMT+8	**11:45-12:15 am**	**Travel Behavior Profiling based on Spatio-Temporal Graph Learning** Prof. Xiangjie Kong | Zhejiang University of Technology, China
	12:15-13:00 pm	**Break**
Keynote Session 2		
13:00-13:30 PM UTC/GMT+8	**13:00-13:30 pm**	**Metaverse supported IoT & ChatGPT via blockchained federated learning** Prof. Wanyang Dai | Nanjing University, China
8:30-9:00 AM UTC/GMT+3	**13:30-14:00 pm**	**New Ethylene Sensing Systems for Reducing Food Waste** Prof. Emeritus Yael Nemirovsky | Israel Institute of Technology, Israel
Invited Session 2		
8:00-8:30 AM UTC/GMT+2	**14:00-14:30 pm**	**Advanced architectures of Next Generation Wireless Networks** Prof. Pascal Lorenz |University of Haute-Alsace, France

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April 9, 2023 UTC/GMT+8 (Online in ZOOM)		
Speaker's time slot	**Standard Time (Beijing UTC/GMT+8)**	**Presentation Information**
7:30-8:00 AM UTC/GMT+1	**14:30-15:00 pm**	**Intelligent and Green Non-Terrestrial Networks (NTNs)** Dr. Aryan Kaushik | University of Sussex, UK
Oral Session		
15:00-15:15 PM UTC/GMT+8	**15:00-15:15 pm**	**Scenario Modelling of Country's Region DeveloPMent with Artificial Intelligence Support** Alexander Raikov | National Supercomputer Center in Jinan, China
16:15-16:30 PM UTC/GMT+7	**15:15-15:30 pm**	**Connected-C F 2 : Learning the Explainability of Graph Neural Network on Counterfactual and Factual Reasoning via Connected Component** Yanghepu Li | Kyoto University, Japan
7:30-7:45 AM UTC/GMT+0	**15:30-15:45 pm**	**Blockchain-based IoMT and secure EHR model: case of Senegal** Doudou Dione | Cheikh Anta Diop University, Senegal
Online Poster		
Online Poster	**ID 86** **Mun-kyu LEE**	Analysis of Regional Safety Index Based on Public Data: Focusing on Suwon City
Online Poster	**ID 96** **Xue Sun**	How to promote user updating behavior through interface design: Empirical study based
Online Poster	**ID 94** **Marc momar Tall**	Proposal for a Local Database: Segmentation and Classification
Online Poster	**ID 100** **Hao Wang**	An event-driven spectrum-aware routing protocol based on Hungarian algorithm in Cognitive Radio Sensor Networks
Online Poster	**ID 107** **Yan-Min Zhang**	A Social Network Analytics Approach of Exploring the Characteristics of Peer Interaction for Senior Preschoolers
Online Poster	**ID 110** **Shu-Jing Wu**	Constructing an Evaluation Index of Teaching Ability for Financial Literacy Education Based on TPACK Using the AHP Approach
Online Poster	**ID IS103** **Qiukun Li**	Research On Model Based On Big Data Technology For Process Control

Keynote Speakers

Hongyang Chen

Zhejiang Lab, China

Dr. Hongyang Chen, IEEE Senior Member, IEEE Distinguished Lecturer. He is currently a Principal Investigator/Senior Research Scientist with the Zhejiang Laboratory, China. He has published 90 referred journal and conference papers in ACM Trans. on Sensor Networks, IEEE Trans. on Signal Processing, IEEE Trans. on Wireless Communications, IEICE Trans. on Fundamentals, IEEE MILCOM, IEEE GlOBECOM, IEEE ICC and more. Dr. Chen served as the Editor for European Transactions on Telecommunications (ETT), the editor for IEEE Trans. on Wireless Communications, and the associate editor for IEEE Communications Letters. He is serving as an associate editor for IEEE IoT journal, a leading editor of IEEE JSTSP special issue on tensor decomposition.

Title: Intelligent IoT and Its Applications

Abstract:

I Internet of Things (IoT) is an important component of the upcoming 5G/B5G and further future generations of wireless networks. Smart meters, smart rooms, mobile bicycle sharing, and proprietary versions of some wireless technologies have been proposed to use IoT for this purpose. 3GPP has been working on M2M, NB-IoT, MTC as part of R15-R17 work (along with eMBB and other use cases). In this talk, I will introduce a framework to satisfy requirements of IoT. Then, I will present our research results on IoT and related data mining. Some of the related techniques have been studied and standardized will be introduced as well, including the IoT use-cases and their requirements.

Wanyang Dai

Nanjing University, China

Wanyang Dai is a Distinguished Professor in Nanjing University, Chief Scientist in Su Xia Control Technology. He is the current President & CEO of U.S. based (Blockchain & Quantum-Computing) SIR Forum (Industrial 6.0 Forum), President of Jiangsu Probability & Statistical Society, Chairman of Jiangsu BigData-Blockchain and Smart Information Special Committee. He received his Ph.D. in mathematics and systems & industrial engineering from Georgia Institute of Technology in USA. He was a MTS and principal investigator in U.S. based AT&T Bell Labs (currently Nokia Bell Labs) with some project won "Technology Transfer" now called cloud system. He was the Chief Scientist in DepthsData Digital Economic Research Institute. He published numerous influential papers in big name journals including Quantum Information Processing, Operations Research, Operational Research, Queueing Systems, Computers & Mathematics with Applications, Communications in Mathematical Sciences, and Journal of Computational and Applied Mathematics. He received various academic awards and has presented over 50 keynote/plenary speeches in IEEE/ACM, big data and cloud computing, quantum computing and communication technology, computational and applied mathematics, biomedical engineering, mathematics & statistics, and other international conferences. He has been serving as IEEE/ACM conference chairs, editors-in-chief and editorial board members for various international journals ranging from artificial intelligence, machine learning, data science, wireless communication, pure mathematics & statistics to their applications.

Keynote Speakers

Title: Metaverse supported IoT & ChatGPT via blockchained federated learning

Abstract:

We present a blockchained federated learning decision-making system with convolution neural nets and machine learning, which can be applied to Metaverse supported IoT & ChatGPT service systems, 6G/6G+ wireless communications, etc. The design and analysis of an optimal policy computing algorithm for smart contracts within the blockchain supported with cloud computing will be the focus. Inside the system, each order associated with a demand may simultaneously require multiple service items from different suppliers and the corresponding arrival rate may depend on blockchain history data represented by a long-range dependent stochastic process. The optimality of the computed dynamic policy on maximizing the expected infinite-horizon discounted profit is proved concerning both demand and supply rate controls with dynamic pricing and sequential packaging scheduling in an integrated fashion. Our policy is a pathwise oriented one and can be easily implemented online. The effectiveness of our optimal policy is supported by simulation comparisons.

Anand Nayyar

Duy Tan University, Vietnam

Dr. Anand Nayyar received Ph.D (Computer Science) from Desh Bhagat University in 2017 in the area of Wireless Sensor Networks, Swarm Intelligence and Network Simulation. He is currently working in School of Computer Science-Duy Tan University, Da Nang, Vietnam as Professor, Scientist, Vice-Chairman (Research) and Director- IoT and Intelligent Systems Lab . A Certified Professional with 100+ Professional certifications from CISCO, Microsoft, Amazon, EC-Council, Oracle, Google, Beingcert, EXIN, GAQM, Cyberoam and many more. Published more than 150+ Research Papers in various High-Quality ISI-SCI/SCIE/SSCI Impact Factor Journals cum Scopus/ESCI indexed Journals, 70+ Papers in International Conferences indexed with Springer, IEEE and ACM Digital Library, 40+ Book Chapters in various SCOPUS/WEB OF SCIENCE Indexed Books with Springer, CRC Press, Wiley, IET, Elsevier with Citations: 8700+, H-Index: 50 and I-Index: 170 . Member of more than 60+ Associations as Senior and Life Member including IEEE, ACM. He has authored/co-authored cum Edited 50+ Books of Computer Science . Associated with more than 500+ International Conferences as Programme Committee/Chair/Advisory Board/Review Board member. He has 18 Australian Patents, 4 German Patents, 2 Japanese Patents, 16 Indian Design cum Utility Patents, 1 USA Patent, 3 Indian Copyrights and 2 Canadian Copyrights to his credit in the area of Wireless Communications, Artificial Intelligence, Cloud Computing, IoT and Image Processing. Awarded 40 Awards for Teaching and Research —Young Scientist, Best Scientist, Best Senior Scientist, Asia Top 50 Academicians and Researchers , Young Researcher Award, Outstanding Researcher Award, Excellence in Teaching, Best Senior Scientist Award, DTU Best Professor and Researcher Award- 2019, 2020-2021, 2022 and many more. He is listed in Top 2% Scientists as per Stanford University (2020, 2021, 2022) and Listed on Research.com (Top Scientist of Computer Science in Viet Nam-National Ranking: 2; D-Index: 31) .

He is acting as Associate Editor for Wireless Networks (Springer), Computer Communications (Elsevier), International Journal of Sensor Networks (IJSNET)

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(Inderscience), Frontiers in Computer Science, PeerJ Computer Science, Human Centric Computing and Information Sciences (HCIS), Tech Science Press- CSSE, IASC, IET-Quantum Communications, IET Wireless Sensor Systems, IET Networks, IJDST, IJISP, IJCINI, IJGC, IJSIR. He is acting as Editor-in-Chief of IGI-Global, USA Journal titled "International Journal of Smart Vehicles and Smart Transportation (IJSVST)" . He has reviewed more than 2500+ Articles for diverse Web of Science and Scopus Indexed Journals. He is currently researching in the area of Wireless Sensor Networks, Internet of Things, Swarm Intelligence, Cloud Computing, Artificial Intelligence, Drones, Blockchain, Cyber Security, Healthcare Informatics, Big Data and Wireless Communications.

Title: Challenges and Opportunities for AI in Abdominal Radiology

Abstract:

AI in radiology is demonstrating explosive growth. Beneficial applications of AI in radiology for patient care are being implemented and on the horizon. AI for abdominal radiology is a relatively understudied area with potential clinical benefits. In this presentation, I will describe some of the many applications of AI in abdominal radiology including opportunistic screening, body composition analysis, and detection, segmentation and classification of major organ diseases.

Emeritus Yael Nemirovsky

Israel Institute of Technology, Israel

Prof. Emeritus Yael Nemirovsky is an IEEE life Fellow and is a tenured member of the Faculty of Electrical Engineering at Technion – Israel Institute of Technology. Nemirovsky had been involved in II-VI compounds and devices for IRFPAs (infra Red Focal Plane Arrays). Nemirovsky is a pioneer of Micro-Electro-Mechanical Systems (MEMS) research in Israel and in the last two decades her research has focused on Micro-Opto-Electro-Mechanical (MOEMS) Systems. Her current main focus is on CMOS-SOI-MEMS imagers and system-on-chip approach. She has published over 190 papers in refereed journals, co-presented over 200 talks in conferences and filed for several patents (over 26). Nemirovsky is the recipient of an Israeli national award: "The Award for the Security of Israel" and Technion awards for "Best Teacher" and "Novel Applied Research". She also received the Kidron Foundation award for "Innovative Applied Research", Intel award and the USA R&D 100 2001 award recognizing the top 100 new inventions and products of the year in USA. In addition, she is the recipient of the 2008 and the 2012 IBM faculty award. In 2001 she co-founded BlueBird Optical MEMS, has been the CEO during her sabbatical and for 3 years the Chief Scientist of BlueBird. She has served for 3 years (2012-2015) as the head of the department of Electrical Engineering in Kinneret (lake of Galilee) academic college. She is co-founder of TODOS Technologies Inc. – a company established by Technion to commercialize Technion IP and is currently TODOS Chief Scientist and serves on the board of directors.

Title: New Ethylene Sensing Systems for Reducing Food Waste

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Gai-Ge Wang

Ocean University of China, China

Gai-Ge Wang is a professor at Ocean University of China, China. His entire publications have been cited over 13000 times (Google Scholar). The latest Google h-index and i10-index are 62 and 123, respectively. He was selected as one of "2021 Highly Cited Researchers" by Clarivate. He was selected as one of "2020 Highly Cited Chinese Researchers" in computer science and technology by Elsevier. He was selected as one of "MDPI 2021 Most Influential Author Award" in Computer Science and Mathematics by MDPI. He was selected as World's Top 2% Scientists 2020, ranked 3840 in single 2019, and ranked 88554 in career-long citation impact. One of his papers was selected as "100 Most Influential International Academic Papers in China", one of his papers ranks 1 in the selection of the latest high-impact publications in computer science by Chinese researchers from Springer Nature in 2019. He served as Editor-in-Chief of International Journal of Artificial Intelligence and Soft Computing (IJAISC) , Early Career Advisory Board Member of IEEE/CAA Journal of Automatica Sinica , an Editorial Board Member of Engineering Applications of Artificial Intelligence (EAAI), Journal of Computational Design and Engineering (JCDE), Mathematics , and IJBIC . His research interests are swarm intelligence, evolutionary computation, and scheduling.

Title: Improving Metaheuristic Algorithms Using Information Feedback Model

Abstract:

In most metaheuristic algorithms, the individual update process does not (fully) utilize the individual information generated in previous iterations. If this useful information can be fully utilized in subsequent optimization processes, the quality of the feasible solutions produced by the algorithm will be greatly improved. Based on this, a method of reusing available information of previous individuals to guide subsequent search is proposed. In this method, the previous useful information is fed back to the individual update process, and then six information feedback models are proposed. In these models, the individuals of previous iterations are selected in a fixed or random way, and then the useful information of the selected individuals is applied to the individual update process. Then, based on the individuals generated and selected by the basic algorithm, a simple fitness weighting method is used to generate new individuals. Six different information feedback models are applied to 10 metaheuristic algorithms to generate new algorithms and verify the performance of the proposed information feedback model. Experiments show that these new algorithms are significantly better than the basic algorithms on 14 standard test functions and 10 CEC 2011 real world problems, and further prove the effectiveness of the proposed information feedback model. At the same time, the model is applied to solve many-objective optimization methods (MOEA/D and NSGA-III), and good results are achieved.

Hamed Taherdoost

University Canada West, Canada

Hamed Taherdoost is an award-winning leader and research and development professional. He is the Founder of Hamta Group | Hamta Business Solution and Associate Professor at University Canada West. He has over 20 years of experience in both industry and academic sectors. He has worked at in-ternational companies from Cyprus, the UK, Malta, Iran, Malaysia, and Canada and has been highly involved in

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development of several projects in different industries, healthcare, transportation, oil and gas and IT. He was the PeerJ Award winner and the winner of Business Excellence Award for business leadership, innovation and creativity, and results achieved, and was also selected as a qualified recipient of the Promising Startups in Asia at Asia Corporate Excellence & Sustainability Awards. He was the finalist for the Innovation in Teaching of Research Methodology Excellence Awards and was nominated as the finalists in Southeast Asian Startup Awards by Global Startup Awards. He was ranked as 9th top SSRN Business Authors among world's most-cited researchers till end of July 2022, awarded the most read contributions from Canada by ResearchGate, July and Octo-ber 2021. His research achievements also include winning several best paper awards, outstanding re-viewer awards and best presentation awards like MLIS 2021 & 2022. He has been listed on the Stan-ford-Elsevier list of World's top 2% of scientist by August 2021 and 2022. He is a Certified Cyber Se-curity Professional and Certified Graduate Technologist. He is senior member of IEEE, IAEEEE, IASED, and IEDRC and WGM of IFIP TC11 - Assurance and Information Security Management, and member of CSIAC), ACT-IAC, and AASHE. Currently, he is involved in several multidisciplinary re-search projects, including studying innovation in information technology, blockchain and cybersecu-rity, and technology acceptan.

Title: Cybersecurity: Emerging Trends and Future Direction

Abstract:

As the sector expands, more experts and businesses will need to recruit cybersecurity specialists. With a persistent surge in cyber risks, corporations and their boards prioritize cybersecurity. Several facets of security technology and strategy need improvement. To keep ahead of the curve, security professionals need to have a comprehensive perspec-tive of the development of digital technology. Monitoring the evolution of these tech-nologies, as well as their political, economic, and social settings, is crucial for making educated business choices about organizational resilience. In the following years, the fu-ture of the cybersecurity business will invert. This speech will discuss cybersecurity in the context of contemporary trends and future development.

Sudan Jha

Kathmandu University, Nepal

With a total 21+ years of teaching, research and industrial experience, Prof. Sudan Jha is a Senior IEEE member; Editor-in-Chief, International book series editor and acclaimed Principal Scientist. He received his first Ph.D. degree in 2015 and second in 2019*; presently working as a Professor in Department of Computer Science & Engineering, Kathmandu University, Nepal. Previously, he has worked in reputed universities in India. His graduation/post-graduation in engineering are from MNREC (Motilal Nehru Regional Engineering College), Allahabad, India and schooling from Saint Xavier, Kathmandu, Nepal. Research: He has 75+ accepted and published research papers, book chapters in reputed SCI, SCIE, indexed refereed journals and conferences. conferences. He serves as Editor-in-Chief in an international journal; Guest Editors in SCIE/ESCI/SCOPUS indexed journals. He has two patents in his name. He has authored / edited 6 books for recent advanced topics in IoT, 5G, AI for the publishers - Elsevier, CRC and AAP. He is an internationally acclaimed Keynote Speaker in several international conferences, Resource Person in National/International faculty development programs and Short term training programs for faculties and students.

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He is also an IBM certified Engineer on "Microservices Architecture And Implementation"; Certified Data Scientist with proficiency in Python; NASSCOM and Ministry of Electronics and Information Technology, Govt. of India certified "Machine Learning - Linear Regression"; Certified in "Foundations of Artificial Intelligence" by SkillsUp; His research area of interest includes Internet of Things, Artificial Intelligence, Machine Learning (Deep Learning), Neutrosophic theory and Neutrosophic Soft Set Systems.

Title: Prospects and Challenges in Industrial Internet of Things (IIoT)

Abstract:

The integration of technology and the Internet of things (IoT) in industries, especially in the manufacturing industry, has been increased massively in recent times. Some of the main objectives to implement the Industrial Internet of things (IIoT) has been but is not limited to, increase productivity, security, and effectiveness of the company. With recent development in fields like comprehensive networking and 5G technology, IIoT has been an effective tool for industrial factories to increase production, lower operational costs, regularize distribution systems, and optimize the process through remote monitoring and smart automation. With the adoption of this heterogeneous and complex technology in the industrial field, it has cope with many challenges in this sector such as interoperability, security, privacy, scalability, heterogeneity, reliability, and resource management. These challenges have been hard to overcome with an increase in real-time load in the system due to different factors and doing so has been the most essential goal and the requirement for the IIoT to be more reliable and work on its full potential.

Prof. Pascal Lorenz

University of Haute-Alsace, France

Pascal Lorenz received his M.Sc. (1990) and Ph.D. (1994) from the University of Nancy, France. Between 1990 and 1995 he was a research engineer at WorldFIP Europe and at Alcatel-Alsthom. He is a professor at the University of Haute-Alsace, France, since 1995. His research interests include QoS, wireless networks and high-speed networks. He is the author/co-author of 3 books, 3 patents and 200 international publications in refereed journals and conferences. He was Technical Editor of the IEEE Communications Magazine Editorial Board (2000-2006), IEEE Networks Magazine since 2015, IEEE Transactions on Vehicular Technology since 2017, Chair of IEEE ComSoc France (2014-2020), Financial chair of IEEE France (2017-2022), Chair of Vertical Issues in Communication Systems Technical Committee Cluster (2008-2009), Chair of the Communications Systems Integration and Modeling Technical Committee (2003-2009), Chair of the Communications Software Technical Committee (2008-2010) and Chair of the Technical Committee on Information Infrastructure and Networking (2016-2017). He has served as Co-Program Chair of IEEE WCNC'2012 and ICC'2004, Executive Vice-Chair of ICC'2017, TPC Vice Chair of Globecom'2018, Panel sessions co-chair for Globecom'16, tutorial chair of VTC'2013 Spring and WCNC'2010, track chair of PIMRC'2012 and WCNC'2014, symposium Co-Chair at Globecom 2007-2011, Globecom'2019, ICC 2008-2010, ICC'2014 and '2016. He has served as Co-Guest Editor for special issues of IEEE Communications Magazine, Networks Magazine, Wireless Communications Magazine, Telecommunications Systems and LNCS. He is associate Editor for International Journal of Communication Systems (IJCS-Wiley),

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Journal on Security and Communication Networks (SCN-Wiley) and International Journal of Business Data Communications and Networking, Journal of Network and Computer Applications (JNCA-Elsevier). He is senior member of the IEEE, IARIA fellow and member of many international program committees. He has organized many conferences, chaired several technical sessions and gave tutorials at major international conferences. He was IEEE ComSoc Distinguished Lecturer Tour during 2013-2014.

Title: Advanced architectures of Next Generation Wireless Networks

Abstract:

Internet Quality of Service (QoS) mechanisms are expected to enable wide spread use of real time services. New standards and new communication architectures allowing guaranteed QoS services are now developed. We will cover the issues of QoS provisioning in heterogeneous networks, Internet access over 5G networks and discusses most emerging technologies in the area of networks and telecommunications such as IoT, SDN, Edge Computing and MEC networking. We will also present routing, security, baseline architectures of the inter-networking protocols and end-to-end traffic management issues.

Aryan Kaushik

University of Sussex, UK

Prof. Aryan Kaushik is Assistant Professor at the University of Sussex, UK. Prior to that, he has been with University College London, UK, from 2020-21, University of Edinburgh, UK, from 2015-19, and Hong Kong University of Science and Technology, Hong Kong, from 2014-15. He has held visiting appointments at Imperial College London, UK, University of Luxembourg, Luxembourg, Beihang University, China, and Athena RC, Greece. He has been involved as research lead in UK MOD, DSTL, DASA and EPSRC funded projects on integrated sensing and communications including UK-wide UDRC consortium, PI in UKRI HEIF supported project in green and autonomous UAVs and Sussex-ROF funded project on integrated sensing and communications, and many other collaborative projects. He is the Editor of upcoming book on “Integrated Sensing and Communications for Future Wireless Networks: Principles, Advances and Key Enabling Technologies,” Elseveir. He has been also contributing to the IEEE ComSoc Technology News articles, book chapters and white papers. He is an Associate Editor of the IEEE Open Journal of the Communications Society, IEEE Communications Letters, IET Signal Processing and IET Networks, and Lead Guest Editor for several Special Issues at IEEE and IET journals such as IEEE Internet of Things Magazine, IEEE Open Journal of the Communications Society and IET Signal Processing. He has been Track Chair for IEEE ICC 2024 and IEEE WCNC 2023, Publication Chair at IEEE ICMLCN 2024, Tutorial/Invited Speaker at IEEE WCNC 2023 conference and workshop, EuCNC and 6G Summit, WiSPNET 2023, and General Chair for workshops at conferences such as IEEE PIMRC 2023, IEEE WCNC 2023, IEEE PIMRC 2022 and IEEE SECON 2022. He has been TPC Member flagship conferences such as at IEEE ICC 2021-23, Sessions Chair at IEEE WCNC 2023 and Conference Champion at IEEE PIMRC 2020. His research interests are in signal processing for 6G communications, integrated sensing & communications, RIS & holographic surfaces, NTNs, and mmWave MIMO.

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Title: Intelligent and Green Non-Terrestrial Networks (NTNs)

Abstract:

All deployment configurations and use cases of non-terrestrial network (NTN) technology such as NTNs with low Earth orbit (LEO) satellites, unmanned aerial vehicles (UAVs), and AI/deep reinforcement learning assisted NTNs, will tend to be key technology enablers in 5G Advanced and 6G-envisioned communication systems. Following 3GPP latest releases, recent trends and benefits of implementing NTNs indicate an exponential trajectory in terms of the growth for our future wireless communication standards. It will result into a truly hyper-connected world with the type of global connectivity that can continue to close the digital divide that exists today. This talk will provide insights on designing intelligent and energy-efficient NTNs for global connectivity using deep reinforcement learning, edge computing and AI-based approaches.

Xiangjie Kong

Zhejiang University of Technology, China

Dr. Xiangjie Kong is currently a Full Professor in the College of Computer Science & Technology, Zhejiang University of Technology (ZJUT), China. Previously, he was an Associate Professor in School of Software, Dalian University of Technology (DUT), China, where he was the Head of the Department of Cyber Engineering. He is the Founding Director of City Science of Social Computing Lab (The CSSC Lab) (http://www.cssclab.cn).He is/was on the Editorial Boards of 6 International journals. He has served as the General Co-Chair, Workshop Chair, Publicity Chair or Program Committee Member of over 30 conferences. Dr. Kong has authored/co-authored over 140 scientific papers in international journals and conferences including IEEE TKDE, ACM TKDD, IEEE TNSE, IEEE TII, IEEE TITS, IEEE NETW, IEEE COMMUN MAG, IEEE TVT, IEEE IOJ, IEEE TSMC, IEEE TETC, IEEE TASE, IEEE TCSS, WWWJ, etc.. 5 of his papers is selected as ESI- Hot Paper (Top 1‰), and 16 papers are ESI-Highly Cited Papers (Top 1%). His research has been reported by Nature Index and other medias. He has been invited as Reviewers for numerous prestigious journals including IEEE TKDE, IEEE TMC, IEEE TNNLS, IEEE TNSE, IEEE TII, IEEE IOTJ, IEEE COMMUN MAG, IEEE NETW, IEEE TITS, TCJ, JASIST, etc.. Dr. Kong has authored/co-authored three books (in Chinese). He has contributed to the development of 14 copyrighted software systems and 20 filed patents. He has an h-index of 42 and i10-index of 104, and a total of more than 6200 citations to his work according to Google Scholar. He is named in the 2019 and 2020 world's top 2% of Scientists List published by Stanford University. Dr. Kong received IEEE Vehicular Technology Society 2020 Best Land Transportation Paper Award, and The Natural Science Fund of Zhejiang Province for Distinguished Young Scholars. He has been invited as Keynote Speaker at 2 international conferences, and delivered a number of Invited Talks at international conferences and many universities worldwide. His research interests include big data, network science, and computational social science. He is a Distinguished Member of CCF, a Senior Member of IEEE, a Full Member of Sigma Xi, and a Member of ACM.

Title: Travel Behavior Profiling based on Spatio-Temporal Graph Learning

Abstract:

A modern city is a ternary space that contains the physical world, human society, and

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information space. Urban spatio-temporal data is the foundation of urban travel intelligence. Based on urban spatio-temporal data, the accurate description of travel information in cities is the premise of forecasting/warning and decision-making assistance. Crowd travel knowledge and information are extracted via integrating, analyzing and mining of multi-source trajectory data obtained by mobile crowd sensing. This brings new idea to solve the challenges fro smart transportation, improve the efficiency of urban resource utilization, optimize urban management and services, and improve residents' lives quality towards smart cities. This report will explore the research frontiers of spatio-temporal graph learning-based trajectory big data mining and analysis and its application in crowd travel behavior profiling, and introduce some related work.

Thanks again for your great support to ICASIS2023!