IEEE
CITS
2023

**2023 International Conference on
Computer, Information and Telecommunication Systems**

**Genoa, Italy
July 10-12, 2023**

Technical Sponsors:

IEEE

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CITS 2023 General Chairs' Message

Welcome to the 2023 International Conference on Computer, Information and Telecommunication Systems (CITS 2023). This year's conference marks the 11th anniversary of CITS, which is being held on annual basis.

CITS 2023 offers a unique forum for researchers and practitioners from academia, industry, business, and government to share their expertise results and research findings in all areas of Computer, Information and Telecommunication Systems.

This year's conference includes an outstanding technical program, four distinguished keynote speakers and a tutorial instructor. The conference will be held in Genoa, Italy.

CITS 2023 technical program consists of several technical tracks. Each track consists of several sessions of top-quality papers. The topics covered in the program include, Artificial Intelligence (AI), machine learning, data analytics/science, computer networks, wireless networks, wireless sensor networks, telecommunications, cyber security, information security, cell network systems, parallel and distributed computing, databases and data mining, hardware/architecture/real-time systems, modeling and simulation, performance evaluation, digital signal processing, image processing, pattern recognition, multimedia systems and video processing, neural networks, deep learning, cloud computing, web systems, security and information assurance, algorithms, e-services and e-business, and collaborative learning systems, among others.

This year, we received a large number of quality papers. Only very high-quality papers have been accepted. The acceptance ratio is about 48,7 %. This is an indicative of the diligent work of the senior program chair, program committee chairs, technical program committee members and reviewers. The accepted papers come from all over the World with representation from academia, industry, business and government. Moreover, accepted papers will appear in IEEE Xplore and SCOPUS.

Many individuals have contributed to the success of this high caliber international conference. Our sincere appreciation goes to all authors including those whose papers were not included in the program. Many thanks are also due to our distinguished keynote speakers and the tutorial instructor for their valuable contribution to the conference.

Special thanks are also due to the senior program chair, Prof. Petros Nicopolitidis, for his outstanding role in leading the technical program efforts. Thanks also are due to the other program chairs. Many thanks also go to the technical program committee members and reviewers for their timely work and efforts. Special thanks to Fabio Patrone for his excellent efforts on local arrangements.

Special thanks go to the publication chairs and assistant general chair, Dr. Yu Guo for his outstanding work and dedication. Thanks to our dedicated Webmaster Prof. Antonio Bueno for his great and reliable work. Special thanks go to the international publicity committee members and international liaisons for their excellent work.

Special thanks are due to the international steering committee of the CITS. Thanks to the leaders, faculty, staff and students of the University of Genoa for hosting the Confenrce and for putting the resources of the University under the disposal of the Conference.
We also like to thank the IEEE Communication Society for technical co-sponsorship of the conference.

Finally, on behalf of the 2023 IEEE International Conference on Computer, Information and Telecommunication Systems (CITS 2023), we invite all of you to enjoy the program and your stay in the beautiful city of Genoa.

Mohammad S. Obaidat, General Chair, Fellow of IEEE, Fellow of SCS, Past President of the Society for Modeling & Simulation International (SCS), Founding Editor in Chief, Wiley Security and Privacy Journal, Editor in Chief, International Journal of Communication Systems, Recipient of SCS Hall of Fame

Award, Recipient of the Technical Achievement Award from IEEE ComSoc-Technical Committee on Communication Software

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Senior Member, IEEE

Kuei-Fang (Leila) Hsiao
Executive General Chair
Senior Member of IEEE

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Senior Program Chair
Senior Member of IEEE

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Prof. Franco Davoli

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Prof. Kuei-Fang (Leila) Hsiao

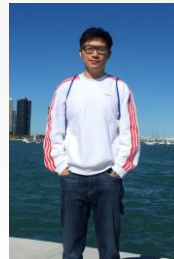**Prof. Petros Nicopolitidis**

Dr. Yu Guo

Prof. Fabio Patrone

Prof. Khan Muhammad

Prof. Zhaolong Ning

Prof. Sudeep Tanwar

Prof. Pengfei Wang

Dr. Antonio Bueno

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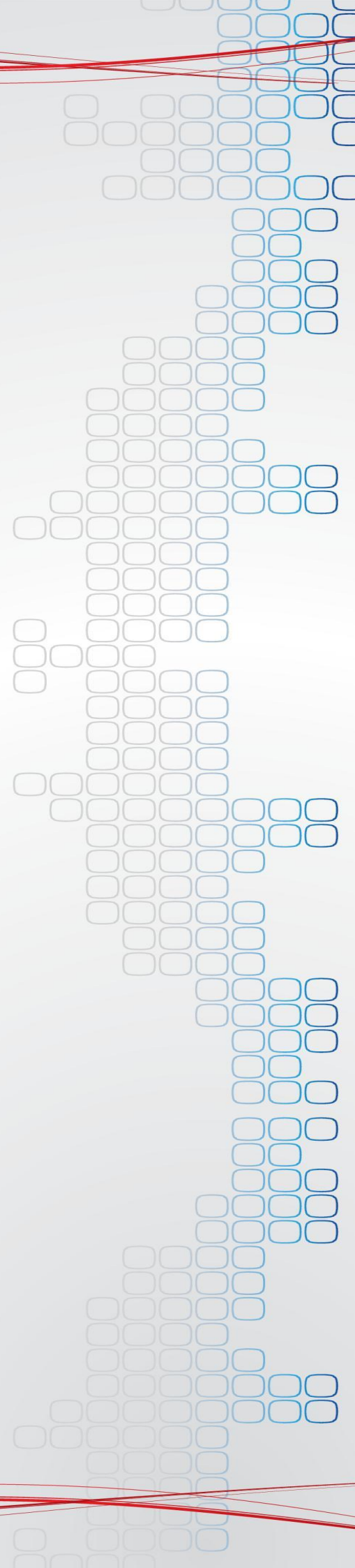
List of reviewers

Hamid Arabnia, Univ. of Georgia, USA
Georgia Beletsioti, Aristotle Univ. of Thessaloniki, Greece
Jalel Ben Othman, CentraleSupélec & Univ. of Sorbonne Paris Nord, France
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Jay Wang, , USA
Bin Xiao, The Hong Kong Polytechnic Univ., USA
Sherali Zeadally, Univ. of Kentucky, USA

Program At a Glance
All Times Listed here are Based on Italy Local Time

Monday, July 10		Tuesday, July 11		Wednesday, July 12	
9:00-9:30	Opening Session	9:00-10:30	Networking 1	9:00-10:30	Information Technology 2
9:30-10:30	Keynote Speech 1	10:30-10:45	Coffee Break	10:30-11:00	Closing Session
10:30-10:45	Coffee Break	10:45-12:15	Networking 2		
10:45-11:45	Keynote Speech 2	12:15-13:15	Lunch		
11:45-13:00	Lunch	13:15-14:45	Telecommunications 1		
13:00-14:00	Keynote Speech 3	14:45-16:15	Telecommunications 2		
14:00-15:00	Keynote Speech 4	16:15-16:30	Coffee Break		
15:00-15:15	Coffee Break	16:30-18:00	Computer Systems		
15:15-17:00	Security	18:00-19:40	Information Technology 1		
17:00-18:00	Tutorial	20:00	Dinner		
19:00	Reception				

Schedule

9:00 - 9:30

Opening Session

9:30 - 10:30

Keynote Speech 1

Simulation for the invention of new services: the case of active fluid dynamics
Session Chair: Franco Davoli

Distinguished Keynote speaker: Prof. Stefano Giordano,
Department of Information Engineering University of Pisa and CNIT (National Inter-University Consortium for Telecommunications)

Future networks, including the new generations of cellular mobile networks (such as 5G advanced and 6G), promise reliability, security, and performance features that open up frontiers for unique and unforeseen services. These services will not only involve humans but also machines and embedded intelligence. The dream of a completely new global digital infrastructure, unifying storage, processing (including AI and real-time control), sensing, and communication into an integrated enabling platform, will require the same simplicity in setting up new services that we experience today in building apps and websites.

Most of these functions will integrate "learning" capabilities, and understanding the details of real use cases will be of utmost importance. The traditional "one size fits all" approach of legacy networks will be replaced by tailored solutions that leverage the impressive multi-layered disaggregated flexibility of the infrastructure. These tailored solutions will require new "brains" related to the adoption of simulation, emulation, and digital twins.

During the talk, a real case of "digital transformation" impacting the automotive industry will be presented, highlighting the relevance of human-centric approaches and service design capabilities, even in the field of adaptive fluid dynamics.

Bio

Stefano Giordano is full professor at the Department of Information Engineering of the University of Pisa where he is the responsible of the Telecommunication Networks Laboratories giving lectures both at the University of Pisa and the Italian Navy Academy. He is senior member of the IEEE Comsoc and at present vice-chair of the Tactile Internet TC; he was Chair of the Communication Systems Integration and Modeling (CSIM) Technical Committee. He is author of more that 300 papers on peer reviewed international conferences and journals on the practical and theoretical aspect of modern networks including SDN, NFV and IoT. He was the responsible for the participation of the University of Pisa to the Euro-NGI (Next Generation Internet in Europe) Network of Excellence. He is deeply involved in new educational activities ranging from the International Master Program in Computer Science and Networking of the University of Pisa (where he is the president) to the Pre-University Activities within the Educational Services Board of IEEE Comsoc where he was elected as representative of the TCs. He was contributing to the

born and activities of several start-ups such as Natech, Nextworks, Netresults, Sintonica. He was co-founder of the CUBIT consortium where he is at present President of the board. Next year he will be the general co-chair of IEEE HPSR 2024 in Pisa.

10:30 - 10:45

Coffee Break

10:45 - 11:45

Keynote Speech 2

Internet of Things and Artificial Intelligence: Integration Issues, challenges and new opportunities
Session Chair: Giovanni Battista Gaggero

Distinguished Keynote speaker: Prof. Floriano De Rango, University of Calabria, Italy

Proliferation of IoT devices is imposing to carefully plan and design the network infrastructure to support additional traffic load, massive access, quality of service assurances and security guarantees. Moreover, IoT and its pervasivity can represent a new way to perceive the environment and the place that we live. This can offer a new way to collect information more intensely than what was possible in the past opening the way to create advanced intelligence for the environment and also for the network management. Artificial intelligence (AI) can be applied as an enabling technology to create novel form of intelligence to efficiently manage smart things and devices but also to organize the overall network infrastructure. To integrate AI in the cloud, in the network or in the IoT devices new issues can arise related to the scalability of access network, communication protocols, the data collection strategies. The security and risks for collected data, latency in the answer between AI modules or decision support systems and devices, energy consumption need to be accounted in the networking system design. A shifting of the classical centralized and on the cloud intelligence is imposed and new and more distributed architectures able to localize intelligence or distribute it among devices or at the border (EDGE) of the network is mandatory. During this talk novel threats, challenges and also opportunities for the tight integration between IoT devices will be discussed with some emphasis also on application domains that can get advantage by this new integration.

Bio

Floriano De Rango is Associate Prof. in Telecommunication and Networking at DIMES Dept., University of Calabria since 2017. He got the national habilitation as full Prof. in 2016 by Minister of University and Research (MIUR). He is Senior Member of the IEEE.

He was recipient of Young Researcher Award in 2007 for a Project on Vehicular Ad Hoc Networks (VANETs) called ATENA (Autoconfiguring inTelligent vEhicular Network for urban Area). His interests include Internet of Things, Network Security, Distributed Intelligence, Adaptive Wireless Networks, Ad Hoc Networks, Pervasive Computing, Satellite networks, IP QoS architectures. He has been involved in the organization of many conferences in the following roles: Program Chair of Ambysis Conference in 2009, track chair in Mobile Ad Hoc Networks in Wireless Telecommunications Symposium (WTS) 2011, Program chair in Simulation and Performance Evaluation in Telecommunication Systems (SPECTS) 2013-2014, track-chair of the Wireless Networks track in Wireless Days 2013 in Valencia, vice-General Chair in Summer Simulation Conference (SCS) 2015 in Chicago, track-chair of Wireless Communications track in Consumer Communication and Networking Conference (CCNC) 2015 in Las Vegas, General Chair of Summer Simulation Conference (SCS) 2016 in Montreal, Program Chair of Simultech 2017 in Madrid, Program Chair of Distributed Simulation and Real Time (DS-RT) 2018 in Madrid, Program

Chair of Simultech 2018 in Porto, Portugal, General Chair of Distributed Simulation and Real Time (DS-RT) 2019 in Rende (CS), Italy, Program Chair in Simultech 2020 in France (on-line streaming), Program chair of Distributed Simulation (DS-RT) 2020 in Prague, Czech Republic, Tutorial Chair in Consumer Communication and Networking Conference (CCNC) 2020 in Las Vegas, General Chair of Simultech 2021 (on-line steaming), Program Chair of Distributed Simulation and Real-Time (DS-RT) 2021 in Valencia, Spain, Program Chair in Wireless Days 2021 in Paris, France. General Chair of Simultech 2021-2023, General Chair of ICT-DM 2023 in Italy, Program Chair of MsWim 2023 in Montreal.

In Dec. 2020 he has been ranked in the Top 2% Computer Science World Scientist according to clarivate https://data.mendeley.com/datasets/btchxktzyw/2. In 2018 he has been ranked in the Top Italian Scientist VIA Academy.

He co-authored till now more than 300 papers in International Conferences and Journals. He is in the editorial board of some International Journals such as Internet Technology Letters (Wiley), Wireless Communication and Mobile Computing (Hindawi), Sensors (MDPI), Electronics (MDPI). He founded two companies: Spintel srl working in the field of IoT design for Home and Building Automation, Energy Saving Systems, for Smart Environment and for Remote Monitoring and Vonet srl working on AI applied at Natural Language Processing (NLP) and automatic responder systems

11:45 - 13:00

Lunch

13:00 - 14:00

Keynote Speech 3

Challenges, Objectives and Pathways towards a Green 6G
Session Chair: Mario Marchese

Distinguished Keynote speaker: Chiara Lombardo, University of Genoa, Italy

The SDN and NFV paradigms have paved the way to a revolutionary wave in ICT technologies, which have heavily relied on virtualization more and more in the last decade and counting. Not only they have enabled new classes of applications and network services, and consequently shaped 5G, but for a long time it has also been implied that their adoption would result in a reduction of the power consumption/carbon footprint ascribable to the networks. However, updated forecasts have pointed out a noticeable usage and deployment increase of computing resources, increasing the associated infrastructure OpEx and CapEx, and, consequently, their carbon footprint and energy requirements in the last several years.

In order to act upon the upcoming 6G technologies in a timely manner, several aspects need to be tackled from the get-go. Among others, the participation of all the stakeholders involved in the ecosystem will be crucial to ensure energy efficiency becomes a collective target rather than a concern of the infrastructure owners alone. In this direction, the 6Green Project aims to enable all the 5/6G stakeholders to reduce their carbon footprint by becoming integral parts of a win-win green-economy business.

This keynote aims to identify the main issues of current mobile technologies and to outline potential approaches to ensure that the next generation will be more sustainable, with specific reference to the 6Green methodology.

Bio

Chiara Lombardo received her Ph.D. in Electronics, Informatics, Robotics and Telecommunications Engineering at the University of Genoa in 2014. Chiara is currently working as a researcher at the University of Genoa, Department of Electrical, Electronic and Telecommunications Engineering, and Naval Architecture (DITEN) and was previously with the CNIT S2N National Laboratory, where she is still involved in most of the research and technical activities. She is currently the technical coordinator of the HORIZON-JU-SNS-2022 Research and Innovation Action 6Green and has previously worked in several H2020 and FP7 projects, including MATILDA, INPUT and ECONET. She has co-authored over 40 papers in international journals, book chapters and international conference proceedings. Her current research interests cover green networking, NFV, edge computing.

14:00 - 15:00

Keynote Speech 4

Towards the Convergence of IoT and Edge Computing: Opportunities and Challenges
Session Chair: Camilo Rojas Milla
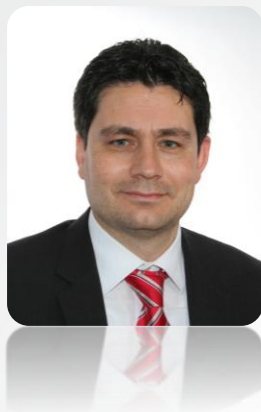
Distinguished Keynote speaker: Prof. Panagiotis Papadimitriou, University of Macedonia, Greece.

Internet of Things (IoT) and Edge Computing are evolving at a rapid pace in order to support the various needs of diverse operational environments, such as smart cities, industrial networks, and automotive. In this respect, there is an increasing need for the integration of IoT functions with edge and cloud computing applications. To this end, I will talk about some latest trends for the virtualization of IoT device functions at the edge of the network infrastructure with the aim of supporting openness and interoperability in a device-independent manner. I will further stress on the need for time-sensitive networking (TSN) for the timely delivery of data between IoT devices and their virtual counterparts, often termed as Virtual Objects (VOs). In this respect, the talk will cover relevant technologies and standards from TSN that can reduce the latency and jitter in the communication between IoT devices and their associated VOs. In addition, I will elaborate on challenges and potential solutions for the orchestration of VOs on edge computing infrastructures, based on the experience gained from recent and ongoing research projects, such as NEPHELE.

Bio

Panagiotis Papadimitriou is an Associate Professor at the department of Applied Informatics in the University of Macedonia, Greece. Before that, he was an Assistant Professor at the Communications Technology Institute of Leibniz Universität Hannover, Germany, and a member of L3S research center in Hanover. Panagiotis received a Ph.D. in Electrical and Computer Engineering from Democritus University of Thrace, Greece, in 2008, a M.Sc Information Technology from University of Nottingham, UK, in 2001, and a B.Sc. in Computer Science from University of Crete, Greece, in 2000. He has been a (co-)PI in several EU-funded (e.g., NEPHELE, NECOS, T-NOVA, CONFINE) and nationally-funded projects (e.g., G-Lab VirtuRAMA, MESON). Panagiotis was a recipient of Best Paper Awards at IFIP WWIC 2012, IFIP WWIC 2016, and the runner-up Poster Award at ACM SIGCOMM 2009. He has co-chaired several international conferences and workshops, such as IFIP/IEEE CNSM 2022, IFIP Networking TENSOR 2020–2023, IEEE NetSoft S4SI 2020, IEEE CNSM SR+SFC 2018–2019, IFIP WWIC 2017–2016, and INFOCOM SWFAN 2016. Panagiotis is also an Associate Editor of IEEE Transactions on Network and Service Management, and a Senior Member of IEEE. His research activities include (next-generation) Internet architectures, network processing, AI-assisted service/resource orchestration, programmable dataplanes, time-sensitive networking (TSN), and edge computing.

Coffee Break

Security

Session Chair: Martine Bellaiche

A Survey of DDoS Attacks Detection Schemes in SDN Environment
> Surabhi Gusain Rawat (Graphic Era Deemed to Be University Dehradun 248 002 India, India); Sumit Pundir (GEU, India); Mohammad Wazid (Graphic Era Deemed to be University, India); Ashok Kumar Das (International Institute of Information Technology, Hyderabad, India); Devesh Singh (Graphic Era University, India); Kuei-Fang Hsiao (University of Texas - Permian Basin, USA)

Cyber Deception System based on Monte Carlo Simulation in the Mobile Edge Computing (MEC)
> Joelle Kabdjou and Elie Fute Tagne (University of Dschang, Cameroon); Danda B. Rawat (Howard University, USA); Jaime C Acosta (DEVCOM Army Research Laboratory, USA); Charles A Kamhoua (US Army Research Laboratory & Network Science Division, USA)

A Study on the Efficiency of Intrusion Detection Systems in IoT Networks
> Shokofeh Seifi (Polytechnique Montréal, Canada); Ronald Beaubrun (Université Laval, Canada); Martine Bellaïche (École Polytechnique, Canada); Talal Halabi (Laval University, Canada)

An FNT-Based Lightweight Hash Function
> Yousuf Al-Aali (Newcastle University, United Kingdom (Great Britain)); Said Boussakta (School of Engineering, Newcastle University, United Kingdom (Great Britain))

DL-CMFD: Deep Learning-Based Copy-Move Forgery Detection Using Parallel Feature-Extractor
> Layeba Faheem (Indian Institute of Technology Dhanbad, India); Soumya Mukherjee (DR B. C. Roy Engineering College, Durgapur, India); Arup Kumar Pal (Indian Institute of Technology (ISM) Dhanbad, India); SK Hafizul Islam (Indian Institute of Information Technology Kalyani, India); Balqies Sadoun (Al-Balqa' Applied University, Jordan)

Tutorial

Blockchain for IoT: Advantage of Winlink Global Radio Email® infrastructure and APRS™ positioning tool from Italian coastal perspective

Instructor: Dr. Miroslav Skoric, Radio Amateur Specialist (IEEE Senior Member)

In this tutorial the audience will learn how to configure and use recently developed hardware and software for participating in the amateur radio APRS (Amateur Packet/ Position Reporting System); How to use APRS and Winlink to communicate with remote correspondents without Internet or telephone connections; How to use APRS and similar amateur radio services in a community to save lives and properties; How to contribute to weather observation (amateur radio meteorology) by participating in APRS; How to create a local AMUNET (AMateur radio University NETwork) and expand visibility of an academic institution

Bio

Miroslav Skoric, Senior Member of IEEE Austria Section, former secretary of SRV (Amateur Radio Union of Vojvodina province in northern Serbia), retired. Diploma in Business Computing. More than three decades of experience in computer network administration and system maintenance (private and governmental sector, retired since 2018). Long-term voluntary practice in the amateur radio (licensed amateur since 1989, amateur radio call sign YT7MPB; ex-CN2MPB; ex-TO0MPB; ex- J41MPB, ex-3B8YT). The instructor has been maintaining amateur radio bulletin board systems (DOS, Windows and Linux platforms) at VHF/HF radio frequencies and Internet inputs/outputs. His interests in radio are heavily centered on emergency communications. Teaching experience includes classes in local high-school amateur radio clubs; technical paper presentations in domestic and international events; tutorials & workshops on the amateur radio in engineering education, magazine/journal articles, five book chapters, and a web page featuring an amateur radio software. Social activities include membership in IEEE Computer Society, IEEE Communications Society, IEEE Education Society, IEEE Antenna and Propagation Society, ARRL, RSGB, RAC, and others.

Reception

9:00 - 10:30

Networking 1

Session Chair: Roberto Caviglia, Fredrik Ahlgren

A reparameterization and monitoring platform for energy efficient GPS trackers in behavioural analysis of wildlife
> Giuseppe Caruso (University of Pisa, Italy); Marialaura Tamburello (Università di Pisa, Italy); Stefano Giordano (University of Pisa, Italy); Davide Adami (CNIT Pisa Research Unit, University of Pisa, Italy)

MACsec and AES-GCM Hardware Architecture with Frame Preemption Support for Transport Security in Time Sensitive Networking
> Daniel Dik (Technical University of Denmark (DTU), Denmark); Iacob Larsen (Comcores Aps, Denmark); Michael S. Berger (Technical University of Denmark, Denmark)

An Efficient Anonymous Authentication Technique for TMIS under the Smart Home Environments
> Chandrashekhar Meshram (Chhindwara University, India); Balqies Sadoun (Al-Balqa' Applied University, Jordan); Parkash Tambare (WRAM Research Lab Pvt. Ltd., India); Agbotiname Lucky Imoize (University of Lagos, Nigeria & Ruhr University, Bochum, Germany)

Evaluation of Machine Learning Prediction Models for Wifi based Indoor Positioning System
> Rebeca Estrada (Escuela Superior Politécnica del Litoral, Espol, Guayaquil, Ecuador & Facultad de Ingeniería en Electricidad y Computación, Ecuador); Nelson Vera (Escuela Superior Politécnica del Litoral, Ecuador); Xavier Aizaga (Escuela Superior Politecnica del Litoral Espol, Ecuador)

10:30 - 10:45

Coffee Break

10:45 - 12:15

Networking 2

Session Chair: Petros Nicopolitidis

Balancing reliability and energy efficiency in LoRa networks using reinforcement learning
> Anastasios Valkanis, Georgia Beletsioti, Konstantinos F Kantelis and Petros Nicopolitidis (Aristotle University of Thessaloniki, Greece); Georgios Papadimitriou (Aristotle University, Greece)

DeltaBin: An Efficient Binary Data Format for Low Power IoT Devices   Neda Maleki, Arslan Musaddiq, David Mozart, Tobias Ohlsson, Mustafa Omareen and Fredrik Ahlgren (Linnaeus University, Sweden)

Two-step Random Access with Collision Resolution Queueing for Cellular IoT networks
    Maria Iloridou and Petros Nicopolitidis (Aristotle University of Thessaloniki, Greece); Georgios Papadimitriou (Aristotle University, Greece)

CASE: Channel Allocation for optimized Spectral Efficiency using deep neural network in underlay cognitive radios
    Karan Gupta (Netaji Subhas University of Technology, India); Sanjay Kumar Dhurandher (Netaji Subhas University of Technology, New Delhi, India)

12:15 - 13:15

Lunch

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13:15 - 14:45

Telecommunications 1
Session Chair: Giovanni Battista, Sergei Semenov

High Layer Coding for Video Transmission
    Sergei Semenov (HiSilicon, Finland)

Spreading Factor Recovery in LoRa Using Machine Learning
    Ahlam Alshukaili (The University of Manchester, United Kingdom (Great Britain)); Khairi A. Hamdi (University of Manchester, United Kingdom (Great Britain))

Majority Voting-based Consensus Mechanism for UAVs Decision Making in Battlefield
    Riya Kakkar and Rajesh Gupta (Institute of Technology, Nirma University, India); Mohammad S. Obaidat (University of Jordan, USA); Nilesh Kumar Jadav (Institute of Technology, Nirma University, India); Sudeep Tanwar (Institute of Technology Nirma University Ahmedabad Gujarat, India)

Mission-level URLLC under variable Rician channel conditions
    Yasantha Chamara Samarawickrama, Álvaro A. M. de Medeiros and Victor Cionca (Munster Technological University, Ireland)

14:45 - 16:15

Telecommunications 2
Session Chair: Mario Marchese

A CSI Amplitude-phase Information Based Graph Construction for GNN Localization
    Xueting Tang and Jun Yan (Nanjing University of Posts and Telecommunications, China)

Automatic Recognition for LPI Radar Waveform Using Sequence-based Deep Learning Model
    Dongeun Lee and Yoonji Kim (Hanyang University, Korea (South)); Dongho Seo and Wonjin Lee (LIGNex1, Korea (South)); Dongweon Yoon (Hanyang University, Korea (South))

A Transfer Learning Based CSI Indoor Localization Using GASF Image Construction
    Xuewen Xiao and Jun Yan (Nanjing University of Posts and Telecommunications, China)

Lifetime estimation and reparameterization of GPS devices for tracking applications

Giuseppe Caruso (University of Pisa, Italy); Davide Adami (CNIT Pisa Research Unit, University of Pisa, Italy); Mike Ojo (University of Pisa, Italy); Marialaura Tamburello (Università di Pisa, Italy); Stefano Giordano (University of Pisa, Italy)

16:15 - 16:30

Coffee Break

16:30 – 18:00

Computer systems
Session Chair: Helen Karatza

SVFF: An Automated Framework for SR-IOV Virtual Function Management in FPGA Accelerated Virtualized Environments
> Stefano Cirici, Michele Paolino and Daniel Raho (Virtual Open Systems SAS, France)

Profit aware Resource Allocation in Fog Computing: A Stackelberg Game Approach
> Akshita Doad (National Institute of Technology Hamirpur, India); Nitin Gupta (NIT Hamirpur, Himachal Pradesh, India); Mohammad S. Obaidat (University of Jordan, USA); Kuldeep Jadon (Institute of Technology and Management, India); Piyush Rawat (National Institute of Technology, India); Kuei-Fang Hsiao (University of Texas - Permian Basin, USA)

Scheduling Delay-Sensitive Bag-of-Task Jobs with Imprecise Computations on Distributed Resources
> Helen Karatza (Aristotle University of Thessaloniki, Greece)

On Implementation of Sparse Finite Impulse Response Secondary Path for Active Noise Control
> Xinnian Guo (Suqian University, China); Li Tan (Purdue University Northwest, USA); Ziyang Kang, Yingna Su, Hongyan Ding and Yang Shen (Suqian University, China)

18:00 - 19:40

Information Technology 1
Session Chair: Oscal T.-C. Chen

Proposal for a security model applying artificial intelligence for administrative management in a higher education institution
> Segundo Moisés MT Toapanta Toapanta (Instituto Tecnológico Universitario Rumiñahui, Ecuador); Rodrigo Humberto del Pozo Durango (Universidad Estatal de Bolívar (UEB), Ecuador); Zharayth Gomez Diaz (Instituto Tecnológico Superior Rumiñahui, Ecuador); José Antonio Orizaga Trejo (CUCEA - Universidad de Guadalajra, Mexico); Luis Enrique Mafla Gallegos (Escuela Politécnica Nacional (EPN), Ecuador); Rocio Maciel (Smart Cities Innovation Center, Mexico); Marcelo MZ Zambrano Vizuete (Instituto Tecnológico Superior Rumiñahui, Ecuador); María Mercedes Baño Hifong (Universidad Católica de Santiago de Guayaquil (UCSG), Ecuador)

Deep Neural Network for User Attribute Recognition in Metaverse Hand Images
> Oscal T.-C. Chen and Li-Cheng Yan (National Chung Cheng University, Taiwan)

Multi-frame Correlated Representation Network for Video Super-Resolution
> Shuo Jin (Beijing Jiaotong University, China); MeiQ Liu (Institute of Information Science & Beijing Jiaotong University, China); Yu Guo (University of

Science and Technology Beijing, China); Chao Yao (University of Science and Technology, Beijing, China); Mohammad S. Obaidat (University of Jordan, USA)

Leveraging Unstructured Data to Improve Customer Engagement and Revenue in Financial Institutions: A Deep Reinforcement Learning Approach to Personalized Transaction Recommendations
Shubham Jain (Technological University of Shannon & Ericsson, Ireland); Enda Fallon (Athlone Institute of Technology, Ireland)

Blockchain model based on human DNA to modify blocks in P2P networks
Segundo Moisés MT Toapanta Toapanta (Instituto Tecnológico Universitario Rumiñahui, Ecuador); Julio Cesar Gancino Vargas, Yngrid Josefina Melo Quintana and Danny Santiago Páez Oscullo (Instituto Tecnológico Superior Rumiñahui, Ecuador)

20:00

Dinner

9:00 - 10:30

Information Technology 2
Session Chair: Aya Khalid Ahmed

Identification of Damaged Date Palm Tree in a Farm using IoT-based Thermal Image Analysis
> Adnan Nadeem (Islamic University of Madinah, KSA & University of Surrey, United Kingdom (Great Britain)); Muhammad Ashraf (Federal Urdu University of Arts Science and Technology Pakistan, Pakistan); Amir Mehmood (Federal Urdu University Pakistan, Saudi Arabia); Muhammad Shoaib Siddiqui (Islamic University of Madinah, Pakistan); Hani Almoamari (Islmaic University of
> Madinah Kingdom of Saudi Arabia, Saudi Arabia); Qammer H Abbasi (University of Glasgow, United Kingdom (Great Britain))

Design an Adaptive Virtual Reality Game to Promote Elderly Health
> Hsiao-Hui Li (Tainan University of Technology, Taiwan); Jian-Jie Lian and Yuan-Hsun Liao (Tunghai University, Taiwan)

Deep Learning Polar Convolutional Parallel Concatenated (DL-PCPC) Channel Decoding for 6G Communications
> Aya Khalid Ahmed (Brunel University London & Ministry of Planning/ Iraq, United Kingdom (Great Britain)); Hamed Saffa Al-Raweshidy (University of Brunel, United Kingdom (Great Britain))

10:30 - 11:00

Closing Session