2023 IFIP Networking Conference (IFIP Networking)

General Chairs Welcome Message

On behalf of the organizing committee, we are pleased to welcome you to the International Federation for Information Processing (IFIP) Conference on Networking 2023 (IFIP Networking 2023).

Networking is the flagship conference of the IFIP Technical Committee on Communication Systems (TC6). This 22nd edition of the series was held in Barcelona, Spain on June 12-15, 2023, hosted by Universitat Politècnica de Catalunya (UPC-BarcelonaTech). We would like to thank the technical co-sponsor IEEE ComSoc, the Golden Patron Huawei and Silver Patrons Cisco and i2CAT Foundation to provide financial support for the event.

After two years in remote mode only (2020 and 2021) and past year in hybrid format (2022), we were all pleased to return to normality and be able to celebrate this edition in-person. The main objectives of Networking 2023 was therefore to bring together again academic and industrial experts of the networking community to discuss the most recent advances in networking, to highlight key issues, identify trends, and develop a vision of the future Internet from a design, deployment and operation standpoints.

A summary of this edition in numbers:

- 4 co-events: the main conference, held June 13-15, three workshops on June 12, the IFIP TC6 50th Anniversary on June 12 and the PhD Symposium on June 13.
- 3 keynote speakers in the main conference, 4 invited talks in the workshops, 2 invited talks in the PhD Symposium and 4 invited talks in the IFIP 50th anniversary.
- 5 Student Travel Grants
- 1 Best Paper Award among the papers submitted to the main conference
- 1 Best Poster Award among the posters presented in the PhD Symposium

The Networking 2023 conference was a success thanks to the efforts of many researchers who enthusiastically collaborated over the past year. Our warm thanks go to all conference chairs.

Specially to the Technical Program Chairs, Prof. Mun Choon Chan of the National University of Singapore (Republic of Singapore), Dr. Xavier Gelabert of Huawei (Sweden) and associate professor Violet R. Syrotiuk of Arizona State University (USA) for their extraordinary work on setting up the conference program through a meticulous double-blind review.

To the Workshop Chairs, Dr. Eusebi Calle, Dr. Lluis Fàbrega and Dr. Pere Vila from Universitat de Girona (Spain) for attracting several workshop proposals and setting up three complementary workshops.

To the Publicity Chairs, Dr. Mirosław Klinkowski of the National Institute of Telecommunications (Poland) and Prof. Salvatore Spadaro of Universitat Politècnica de Catalunya (Spain) to disseminate the event to their innumerable friends and colleagues.

To the Student Travel Grant (STG) Chairs Dr. Walter Cerroni of University of Bologna (Italy) and Dr. Michael McGarry of University of Texas (USA). Thanks to their rigorous work, two students were awarded with the IFIP STG and three students with the National Science Foundation (NSF) STG.

To the Publication Chair Dr. Jordi Paillissé of Universitat Politècnica de Catalunya (Spain) for managing all papers and their respective signed copyrights in the correct format and preparing them for the submission to the IFIP and IEEE digital libraries.

To the Local Chairs, Prof. Josep Solé Pareta and Dr. Jordi Perelló, both from Universitat Politècnica de Catalunya (Spain), for their priceless effort of organizing and coordinating all local providers.

To the Steering Committee Prof. Silvia Giordano of SUPSI (Switzerland), Dr. Robert Bestak of the Czech Technical University in Prague (Czech Republic), Prof. Henning Schulzrinne of Columbia University (USA), Prof. Burkhard Stiller of University of Zurich (Switzerland), and Dr. Joerg Widmer of IMDEA Networks (Spain) for choosing us as general chairs of the conference.

To all staff volunteers Maika Sanchez Miranda, Fatima Yolanda Rodriguez Galan, Abhijit Das, Axel Wassington, Ethungshan Shitiri, Hamid Latif Martinez and Pau Escofet for their service during the conference.

And finally, a big thank to our Web Chair Albert López Brescó of Universitat Politècnica de Catalunya (Spain) for all-round technical and non-technical support provided for the success of this event.

General Chairs

Davide Careglio
Universitat Politècnica de Catalunya

Jordi Domingo
Universitat Politècnica de Catalunya

2023 IFIP Networking Conference (IFIP Networking)

Technical Program Chairs Welcome Message

It is our great pleasure to welcome you to participate in the 22nd Annual IFIP Networking Conference (Networking 2023).

For this edition, a total of 225 papers were initially registered and 192 were successfully submitted within the conference deadline. Among them, 52 papers were finally selected, giving an acceptance rate of 27.1%. We wish to thank the authors of all submitted papers for choosing Networking 2023 as the venue to present their excellent research results.

Following the process consolidated during the last few editions, the review was double blind. A rigorous review process was conducted by 149 highly qualified program committee members: 80 located in Europe, 38 in North America, 27 in Asia, and 4 from other continents. A total of 553 reviews were received. All papers were reviewed by at least 2 independent reviewers (90% by at least 3 reviewers); all accepted papers received at least 3 reviews. As TPC chairs, we first walked through all submissions and directly rejected 2 papers that did not comply with the double-blind review process. Then, we selected reviewers based on bidding and assigned at least 4 reviewers for each paper. After collecting a sufficient number of reviews, we walked through all reviews and selected the papers with conflicting reviews. For these cases, one of the reviewers was selected as a meta-reviewer, meaning s/he had to raise a discussion session with the other reviewers to agree on a final score. Finally, we held a meeting to decide final accepted papers with consensus by fully considering the reviews and discussion results. We would like to extend our thanks to the program committee members and to additional reviewers that contributed their valuable time and expertise to provide professional reviews, discussions, and very useful feedback to authors on a narrow time schedule.

Among the 52 accepted and presented papers, five have been selected as candidates for the best paper award and carefully reviewed by the TPC chairs. The TPC chairs attended the presentation of each candidate best paper to make a final decision based on the quality of the paper and of the presentation. At the end of the process, the paper “Web Privacy by Design: Evaluating Cross-Layer Interactions of QUIC, DNS and H/3” authored by Jayasree Sengupta, Mike Kosek, Justus Fries, Pratyush Dikshit, and Vaibhav Bajpai was selected for the best paper award of IFIP Networking 2023.

The final program consisted of 14 sessions with 3 or 4 papers each spanning 2 and a half days. A keynote presentation was scheduled at the beginning of each day of the conference. In this regard, we would like to thank the keynote speakers, Dr. Ian F. Akyildiz of ITU and Truva Inc. (USA), Dr. Yuanwei Liu of Queen Mary University of London (UK), and Dr. Paola Grosso of University of Amsterdam (Netherlands).

The conference was a highly stimulating event fostering interesting discussions as well as useful interaction between researchers, and provides an excellent forum for exchanging and developing new ideas in the field of networking.

We are looking forward to a successful IFIP Networking 2024.

Technical Program Chairs

Mun Choon Chan
National University of Singapore

Xavier Gelabert
Huawei

Violet R. Syrotiuk
Arizona State University

2023 IFIP Networking Conference (IFIP Networking) Workshop Chairs Welcome Message

IFIP Networking 2023, hosted by the Universitat Politècnica de Catalunya, Barcelona (Spain), solicited half-day or full-day workshops to be held on 12 June 2023. A total of 5 proposals were submitted and 3 were finally accepted based on the technical issues addressed and the consistency of the program.

The workshop “Security for IoT Networks and Devices in 6G (Sec4IoT)” was a half-day event. The main motivation for Sec4IoT 2023 workshop was to bring together researchers and practitioners working on novel security solutions for IoT networks and devices and disseminate current research issues and advances. Sec4IoT 2023 workshop welcomed submissions focused on the design and development of novel security solutions for IoT networks and devices in the future 6G communication platform. Five papers were accepted and presented during the workshop. We would like to thank Dr. José Ribeiro of Evotel Informatica, Prof. Raed Abd-Alhameed of University of Bradford (UK) for proposing, organising, and chairing this workshop.

The workshop “Impact of IT/OT Convergence on the Resilience of Critical Infrastructures (IOCRCI)” was also a half-day event. The IOCRCI workshop offered a timely venue for researchers and industry partners to present and discuss their latest results on the impact of IT/OT Convergence on the Resilience of Critical Infrastructures. We aimed to get a clear understanding of the research challenges for this theme, including insight in the state-of-the-art, availability of data sets and testbeds, positioning papers, experimental and operational experience and situational awareness around the subject. The workshop was a continuation of a series of workshops, jointly organized by Delft University of Technology and University of

Girona, on the theme “Robustness of Complex Networks”. Three papers were accepted and presented during the workshop. We would like to thank Prof. Robert Kooij of Delft University of Technology (the Netherlands), Dr. Erik Meeuwissen of TNO (the Netherlands) and Prof. Jose Marzo of University of Girona (Spain) for proposing, organising, and chairing this workshop.

The workshop “3rd International Workshop on Time-Sensitive and Deterministic Networking (TENSOR) 2023” was a full-day event. Time-sensitive deterministic communications constitute an emerging topic with significant interest from industry and various application domains, such as industrial networks, automotive communications, mobile and wireless networks, as well as service provider networks. Time-sensitive deterministic communications are expected to provide a solid underpinning that will support modern applications connectivity in multiple and distinct use cases and operational environments. The goal of this workshop was to bring together researchers from academia and industry in order to investigate challenging aspects in the area of time-sensitive deterministic communications, as well as identify future research directions for ultra-low latency communications. Open issues and key innovations were discussed for both network performance and network management related aspects of deterministic communications. This was the third edition of TENSOR, after two successful previous editions also co-located to the IFIP Networking conference. Five papers were accepted and presented during the workshop. We would like to thank Dr. Luis M. Contreras of Telefónica (Spain) and Prof. Panagiotis Papadimitriou of University of Macedonia (Greece).

General Workshop Chairs

Eusebi Calle
Universitat de Girona

Lluis Fàbrega
Universitat de Girona

Pere Vila
Universitat de Girona

2023 IFIP Networking Conference (IFIP Networking)

Final Program

Conference Session 1: Internet of Things (IoT)

Session Chair: Susmit Shannigrahi (Tennessee Technological University, USA)

Delay Analysis of TSN Based Industrial Networks With Preemptive Traffic Using Network Calculus

- Mohamed Seliem (University College Cork, Ireland)
- Ahmed H. Zahran (University College Cork, Ireland)
- Dirk Pesch (University College Cork, Ireland)

DMTP: Deadline-Aware Multipath Transport Protocol

- Tony John (Otto Von Guericke University Magdeburg, Germany)
- Adrian Perrig (ETH Zurich Switzerland & Carnegie Mellon University, USA)
- David Hausheer (OVGU Magdeburg, Germany)

Galette: A Lightweight XDP Dataplane on Your Raspberry Pi

- Kyle A Simpson (University of Glasgow & Arista Networks, United Kingdom)
- Chris Williamson (University of Glasgow, United Kingdom)
- Douglas Paul (University of Glasgow, United Kingdom)
- Dimitrios P. Pezaros (University of Glasgow, United Kingdom)

Placement of UAVs to Reconnect Lost Subnetworks in Wireless Sensor Networks

- Lu Lin (Nanjing University of Aeronautics and Astronautics, China)
- Xiaojun Zhu (Nanjing University of Aeronautics and Astronautics, China)
- Ji'ao Tang (Nanjing University of Aeronautics and Astronautics, China)
- Chao Dong (Nanjing University of Aeronautics and Astronautics, China)

Conference Session 2: Anomaly and malware detection

Session Chair: Jayasree Sengupta (CISPA Helmholtz Center for Information Security, Germany)

5GShield: HTTP/2 Anomaly Detection in 5G Service-Based Architecture

- Nathalie Wehbe (Concordia University, Canada)
- Hyame Alameddine (Ericsson Research, Canada)
- Makan Pourzandi (Ericsson, Canada)
- Chadi Assi (Concordia University, Canada)

An Enhanced Model for Machine Learning-Based DoS Detection in Vehicular Networks

- Secil Ercan (Université Gustave Eiffel, France)
- Leo Mendiboure (Université Gustave Eiffel, France)
- Lylia Alouache (CY Cergy Paris University, France & ETIS Laboratory, France)
- Sassi Maaloul (Université Gustave Eiffel, France)
- Tidiane Sylla (Université Gustave Eiffel, France & Université Des Sciences, Des Techniques Et Des Technologies de Bamako, Mali)
- Hasnaa Aniss (University Gustave Eiffel, France)

ER-ERT: A Method of Ensemble Representation Learning of Encrypted RAT Traffic

- Yijing Zhang (Institute of Information Engineering, Chinese Academy of Sciences, China)
- Hui Xue (Institute of Information Engineering Chinese Academy of Sciences, China)
- Jianjun Lin (University of Chinese Academy of Sciences, China)
- Xiaoyu Liu (Institute of Information Engineering, Chinese Academy of Sciences, China)
- Weilin Gai (University of Chinese Academy of Sciences, China)
- Xiaodu Yang (Institute of Information Engineering, Chinese Academy of Sciences, China)
- Anqi Wang (Liaoning University of Technology, China)
- Yinliang Yue (Zhongguancun Laboratory, China); Bo Sun (CNCERT/CC, China)

MetaIoT: Few Shot Malicious Traffic Detection in Internet of Things Networks Based on HIN

- Hongwu Li (Institute of Information Engineering, China)
- Xingyu Fu (Institute of Information Engineering, China)
- Yujia Zhu (Institute of Information Engineering, Chinese Academy of Sciences, China); Chao Li (CNCERT/CC, China)
- Rong Yang (Institute of Information Engineering, Chinese Academy of Sciences, China); Chao Li (CNCERT/CC, China)

Conference Session 3: Wireless Networks

Session Chair: Xavi Gelabert (Huawei, Sweden)

A Multi-Connectivity Architecture With Data Replication for XR Traffic in mmWave Networks

- Muhammad Affan Javed (NYU WIRELESS, USA)
- Pei Liu (New York University, USA)
- Shivendra Panwar (New York University & Tandon School of Engineering, USA)

Energy-Aware Spreading Factor Selection in LoRaWAN Using Delayed-Feedback Bandit

- Renzo E. Navas (IMT Atlantique, France)
- Ghina Dandachi (Inria, France)
- Yassine Hadjadj-Aoul (University of Rennes 1, France)
- Patrick Maillé (IMT Atlantique, France)

Hierarchical Thompson Sampling for Multi-Band Radio Channel Selection

- Jerrod A. Wigmore (MIT, USA)
- Brooke Shrader (MIT Lincoln Laboratory, USA)
- Eytan Modiano (MIT, USA)

IRGAN: cGAN-Based Indoor Radio Map Prediction

- Cheick T Cissé (University of Bourgogne Franche-Comté & Orange Lab Compagny, France)
- Oumaya Baala (FEMTO-ST Institute, Université Bourgogne Franche-Comté, CNRS & UTBM, France)
- Valery Guillet (Orange Labs, France)
- Alexandre Caminada (Université Cote d'Azur & Polytech Nice Sophia - Ecole Polytechnique de l'Université de Nice, France)
- François Spies (University of Franche Comte, France)

Conference Session 4: Privacy and Anonymization

Session Chair: Pratyush Dikshit (CISPA Helmholtz Center for Information Security, Germany)

A Privacy-Preserving Proof-Of-Reputation
- Marina Dehez-Clementi (ISAE-SUPAERO, France & La Rochelle Université, France)
- Mourad Rabah (La Rochelle University, France)
- Yacine Ghamri-Doudane (University of la Rochelle, France)

Linking User Identities Across Social Networks via Frequency Domain Analysis
- Hui Xue (Institute of Information Engineering Chinese Academy of Sciences, China)
- Bo Sun (CNCERT/CC, China)
- Weixuan Mao (CNCERT/CC, China)

Privacy-Enhanced Content Discovery for Bitswap
- Erik Daniel (Technische Universität Berlin, Germany)
- Florian Tschorsch (Technische Universität Berlin, Germany)

Conference Session 5: Transport Protocols

Session Chair: Mun Choon Chan (National University of Singapore, Republic of Singapore)

Hercules: High-Speed Bulk-Transfer Over SCION
- Marten Gartner (University of Magdeburg, Germany)
- Jean-Pierre Smith (ETH Zurich, Switzerland)
- Matthias Frei (SCION Association, Switzerland)
- François Wirz (ETH Zurich, Switzerland)
- Cédric Neukom (ETH Zürich, Switzerland)
- David Hausheer (OVGU Magdeburg, Germany)
- Adrian Perrig (ETH Zurich Switzerland & Carnegie Mellon University, USA)

QUIC on the Highway: Evaluating Performance on High-Rate Links
- Benedikt Jaeger (Technische Universität München, Germany)
- Johannes Zirngibl (Technische Universität München, Germany)
- Marcel Kempf (Technische Universität München, Germany)
- Kevin Ploch (Technische Universität München, Germany)
- Georg Carle (Technische Universität München, Germany)

Secure Middlebox-Assisted QUIC
- Mike Kosek (Technische Universität München, Germany)
- Benedikt Spies (Technische Universität München, Germany)
- Jörg Ott (Technische Universität München, Germany)

Web Privacy by Design: Evaluating Cross-Layer Interactions of QUIC, DNS and H/3
- Jayasree Sengupta (CISPA Helmholtz Center for Information Security, Germany)
- Mike Kosek and Justus Fries (Technical University of Munich, Germany)
- Pratyush Dikshit (CISPA- Helmholtz Center for Information Security, Germany)
- Vaibhav Bajpai (CISPA Helmholtz Center for Information Security, Germany)

Conference Session 6: Network Analysis and Applications

Session Chair: Violet Syrotiuk (Arizona State University, USA)

Filling the Gap: Fault-Tolerant Updates of On-Satellite Neural Networks Using Vector Quantization
- Olga Kondrateva (Humboldt-Universität zu Berlin, Germany)
- Stefan Dietzel (Merantix Momentum GmbH, Germany)
- Maximilian Schambach (Merantix Momentum GmbH, Germany)
- Johannes Otterbach (Merantix Momentum GmbH, Germany)
- Björn Scheuermann (TU Darmstadt, Germany)

GuRuChain: Guarantee and Reputation-Based Blockchain Service Trading Platform
- Mouhamed Amine Bouchiha (La Rochelle University, France)
- Yacine Ghamri-Doudane (University of la Rochelle, France)
- Mourad Rabah and Ronan Champagnat (La Rochelle University, France)

Mobile App Fingerprinting Through Automata Learning and Machine Learning
- Fatemeh Marzani (University of Tehran, Iran)
- Fatemeh Ghassemi Esfahani (University of Tehran, Iran)
- Zeynab Sabahi-Kaviani (University of Tehran, Iran)
- Thijs van Ede (University of Twente, The Netherlands)
- Maarten van Steen (University of Twente, The Netherlands)

On Real-Time Failure Localization via Instance Correlation in Optical Transport Networks
- Pin-Han Ho (University of Waterloo, Canada)
- Yan Jiao (University of Waterloo, Canada)
- Kairan Liang (University of Waterloo, Canada)
- Xiangzhu Lu (University of Waterloo, Canada)
- Yuren You (Huawei Technologies Canada Research Center, Canada)
- János Tapolcai (Budapest University of Technology and Economics, Hungary)
- Bingbing Li (Hubei University of Technology, Wuhan, China)
- Limei Peng (Kyungpook National University, South Korea)

Conference Session 7: SDN and Data center

Session Chair: Salvatore Spadaro (Universitat Politècnica de Catalunya, Spain)

Keeping Up to Date With P4Runtime: An Analysis of Data Plane Updates on P4 Switches
- Henning Stubbe (Technical University of Munich, Germany)
- Sebastian Gallenmüller (Technical University of Munich, Germany)
- Manuel Simon (Technical University of Munich, Germany)
- Eric Hauser (Technical University of Munich, Germany)
- Dominik Scholz (Technical University of Munich, Germany)
- Georg Carle (Technical University of Munich, Germany)

Meta-Migration: Reducing Switch Migration Tail Latency Through Competition
- Sepehr Abbasi Zadeh (University of Toronto, Canada)
- Farid Zandi Shafagh (University of Toronto, Canada)
- Matthew Buckley (University of Toronto, Canada)
- Yashar Ganjali (University of Toronto, Canada)

Optimizing Service Selection and Load Balancing in Multi-Cluster Microservice Systems With MCOSS

- Daniel Bachar (The Interdisciplinary Center Herzliya, Israel)
- Anat Bremler-Barr (Tel-Aviv University, Israel)
- David Hay (The Hebrew University of Jerusalem, Israel)

Scalable Reinforcement Learning for Dynamic Overlay Selection in SD-WANs

- Annalisa Navarro (University of Napoli Federico II, Italy)
- Alessio Botta (University of Napoli Federico II, Italy)
- Roberto Canonico (University of Napoli Federico II, Italy)
- Giorgio Ventre (University of Napoli Federico II, Italy)
- Giovanni Stanco (University of Napoli Federico II, Italy)

Conference Session 8: Resource Management

Session Chair: Hassan Fawaz (Télécom SudParis, France)

Controlling Epidemic Spread Under Immunization Delay Constraints

- Shiju Li (Florida Institute of Technology, USA)
- Xin Huang (Texas State University, USA)
- Chul-Ho Lee (Texas State University, USA)
- Do Young Eun (North Carolina State University, USA)

Game Theoretic Resource Planning and Request Scheduling in Mobile Edge Computing Networks

- Bin Xiang (CNRS at CREATE, Singapore)
- Jocelyne Elias (University of Bologna, Italy)
- Fabio Martignon (University of Bergamo, Italy)
- Elisabetta Di Nitto (Politecnico di Milano, Italy)
- Dusit Niyato (Nanyang Technological University, Singapore)

Imperfect Bandwidth-Sharing Policies Using Network Calculus

- Anne Bouillard (Huawei Technologies France, France)

Maximal Distance Spectrum Assignment for Services Provisioning in EONs

- Xiaolin Wang (Nanjing University - ESIEE Paris, France)
- Fen Zhou (University of Avignon, France)
- Yaojun Chen (Nanjing University, China)
- Ting Wang (ESIEE Paris, France)

Conference Session 9: ML/AI for Networking

Session Chair: Violet Syrotiuk (Arizona State University, USA)

A Cheap and Accurate Delay-Based IP Geolocation Method Using Machine Learning and Looking Glass

- Allen Hong (Tsinghua University, China)
- Yahui Li (Tsinghua University, China)
- Han Zhang (Tsinghua University, China)
- Ming Wang (Tsinghua University, China)

- Changqing An (Tsinghua University, China)
- Jilong Wang (Tsinghua University, China)

Graph Convolutional Reinforcement Learning for Load Balancing and Smart Queuing
- Hassan Fawaz (Télécom SudParis, France)
- Omar Houidi (Telecom SudParis, France)
- Djamal Zeghlache (Institut Mines-Telecom, Telecom SudParis, Samovar & Institut Polytechnique de Paris, France)
- Julien Lesca (Huawei Technologies, France Research Center, France)
- Tran Anh Quang Pham (Huawei Technologies, France)
- Jeremie Leguay (Huawei Technologies, France Research Center, France)
- Paolo Medagliani (Huawei Technologies Co. Ltd., France)

Graph Neural Network-Based Delay Prediction Model Enhanced by Network Calculus
- Lianming Zhang (Hunan Normal University, China)
- Benle Yin (Hunan Normal University, China)
- Qian Wang (Hunan Normal University, China)
- Pingping Dong (Hunan Normal University, China)

Lightweight Network Delay Segmentation Based on Smoothed Hierarchical Clustering
- Sanaa Ghandi (IMT Atlantique, France)
- Alexandre Reiffers-Masson (IMT Atlantique, France)
- Sandrine Vaton (IMT Atlantique, France)
- Thierry Chonavel (IMT Atlantic & Université Européenne de Bretagne, France)

Conference Session 10: Internet Measurements

Session Chair: Paola Grosso (University of Amsterdam, Netherlands)

A Decade Long View of Internet Traffic Composition in Japan
- Irina Tsareva (Technical University of Munich, Germany)
- Trinh Viet Doan (Technical University of Munich, Germany)
- Vaibhav Bajpai (CISPA Helmholtz Center for Information Security, Germany)

Cutting Onions With Others' Hands: A First Measurement of Tor Proxies in the Wild
- Dongqi Han (Tsinghua University, China)
- Shangdong Wang (Tsinghua University, China)
- Zhize He (QI-ANXIN Group, China)
- Zhiliang Wang (Tsinghua University, China)
- Wenqi Chen (Tsinghua University, China)
- Chenglong Li (Tsinghua University, China)
- Jiahai Yang (Tsinghua University, China)
- Xingang Shi (Tsinghua University, China)
- Xia Yin (Tsinghua University, China)

FSTC: Dynamic Category Adaptation for Encrypted Network Traffic Classification
- Navid Malekghaini (University of Waterloo, Canada)
- Hauton J. Tsang (University of Waterloo, Canada)
- Mohammad Ali Salahuddin (University of Waterloo, Canada)

- Noura Limam (University of Waterloo, Canada)
- Raouf Boutaba (University of Waterloo, Canada)

Longitudinal Analysis of Wildcard Certificates in the WebPKI
- David Hasselquist (Linköping University & Sectra Communications, Sweden)
- Ludvig Bolin (Linköping University, Sweden)
- Emil Carlsson (Linköping University, Sweden)
- Adam Hylander (Linköping University, Sweden)
- Martin Larsson (Linköping University, Sweden)
- Erik Voldstad (Linköping University, Sweden)
- Niklas Carlsson (Linköping University, Sweden)

Conference Session 11: DNS

Session Chair: Xavi Gelabert (Huawei, Sweden)

Evaluating DNS Resiliency With Truncation, Fragmentation and DoTCP Fallback
- Pratyush Dikshit (CISPA- Helmholtz Center for Information Security, Germany)
- Mike Kosek (Technical University of Munich, Germany)
- Nils Faulhaber (Membrain GmbH, Germany)
- Jayasree Sengupta (CISPA Helmholtz Center for Information Security, Germany)
- Vaibhav Bajpai (CISPA Helmholtz Center for Information Security, Germany)

Optimizing DNS Resolvers for High Loads
- Gil Einziger (Ben-Gurion University Of The Negev, Israel)
- Itay Alayoff (Ben Gurion University of the Negev, Israel)

Wrapping DNS Into HTTP(S): An Empirical Study on Name Resolution in Mobile Applications
- Baiyang Li (Institute of Information Engineering, Chinese Academy of Sciences, China)
- Yujia Zhu (Institute of Information Engineering, Chinese Academy of Sciences, China)
- Qingyun Liu (Institute of Information Engineering, Chinese Academy of Sciences, China)
- Yong Sun (Institute of Information Engineering, Chinese Academic of Science, China)
- Yuedong Zhang (CNCERT, China)
- Li Guo (Institute of Information Engineering, Chinese Academy of Sciences, China)

Conference Session 12: Network Traffic Engineering

Session Chair: Mun Choon Chan (National University of Singapore, Republic of Singapore)

GNSGA: A Decentralized Data Replication Algorithm for Big Science Data
- Xi Wang (Tennessee Technological University, USA)
- Xusheng Ai (Tennessee Technological University, USA)
- Frank Alexander Feltus (Clemson University, USA)
- Susmit Shannigrahi (Tennessee Technological University, USA)

Tactical Traffic Engineering With Segment Routing Midpoint Optimization
- Alexander Brundiers (Osnabrück University, Germany)
- Timmy Schüller (Deutsche Telekom Technik GmbH & Osnabrück University, Germany)
- Nils Aschenbruck (Osnabrück University, Germany)

The Case for Stochastic Online Segment Routing Under Demand Uncertainty
- Jérôme De Boeck (Université de Fribourg, Switzerland)
- Bernard Fortz (Université Libre de Bruxelles, Belgium)
- Stefan Schmid (University of Vienna, Austria)

Conference Session 13: New computing paradigms and TSN

Session Chair: Violet Syrotiuk (Arizona State University, USA)

Full Exploitation of Limited Memory in Quantum Entanglement Switching
- Panagiotis Promponas (Yale University, USA)
- Víctor Valls (IBM Research Dublin, Ireland)
- Leandros Tassiulas (Yale University, USA)

On the (dis)Advantages of Programmable NICs for Network Security Services
- Jack Zhao (Dalhousie University, Canada)
- Miguel Neves (Dalhousie University, Canada)
- Israat Haque (Dalhousie University, Canada)

Simulation and Practice: A Hybrid Experimentation Platform for TSN
- Marcin Bosk (Technische Universität München, Germany)
- Filip Rezabek (Technische Universität München, Germany)
- Johannes Abel (Technische Universität München, Germany)
- Kilian Holzinger (Technische Universität München, Germany)
- Max Helm (Technische Universität München, Germany)
- Georg Carle and Jörg Ott (Technische Universität München, Germany)

TSN Gatekeeper: Enforcing Stream Reservations via P4-Based In-Network Filtering
- Nurefşan Sertbaş Bülbül (Universität Hamburg, Germany)
- Joshua Jannis Krüger (University of Hamburg, Germany)
- Mathias Fischer (Universität Hamburg, Germany)

Conference Session 14: Streaming and Congestion Control

Session Chair: David Hasselquist (Linköping University & Sectra Communications, Sweden)

Dragonfly: In-Flight CCA Identification
- Dean Carmel (Technion – Israel Institute of Technology, Israel)
- Isaac Keslassy (Technion – Israel Institute of Technology, Israel)

FedABR: A Personalized Federated Reinforcement Learning Approach for Adaptive Video Streaming
- Yeting Xu (Nanjing University, China)
- Xiang Li (Nanjing University, China)
- Yi Yang (Nanjing University, China)
- Zhenjie Lin (China Southern Power Grid Digital Platform Technology Company)
- Wang Liming (China Southern Power Grid Digital Platform Technology Company)
- Wenzhong Li (Nanjing University, China)

Q-Learning for Waiting Time Control in CDN/V2V Live Streaming
- Zhejiayu Ma (Universite Cote D'azur & Easybroadcast, France)
- Frederic Giroire (CNRS, France)
- Guillaume Urvoy-Keller (Université Côte d'Azur, France)
- Soufiane Rouibia (EasyBroadcast, France)

TENSOR Technical Session 1: Latency and Performance Guarantees

Session Chair: Luis M. Contreras (Telefónica, Spain)

Flow Prioritization for TSN Asynchronous Traffic Shapers
- Julia Caleya (University of Granada, Spain)
- Jonathan Prados-Garzon (University of Granada, Spain)
- Lorena Chinchilla-Romero (University of Granada, Spain)
- Pablo Muñoz (University of Granada, Spain)
- Pablo Ameigeiras (University of Granada, Spain)

Data-VCG: A Data Preservation Game for Base Station-Less Sensor Networks With Performance Guarantee
- Jennifer Ly (California State University Dominguez Hills, USA)
- Yutian Chen (California State University Long Beach, USA)
- Bin Tang (California State University Dominguez Hills, USA)

TENSOR Technical Session 2: TSN Platforms

Session Chair: Luis Velasco (Universitat Politècnica de Catalunya, Spain)

On the Integration of OPC UA Over Wired - Wireless Time Sensitive Networking
- Óscar Seijo (Ikerlan Technology Research Centre, BRTA, Spain)
- Raúl Torrego (Ikerlan Technology Research Centre, BRTA, Spain)
- Iñaki Val (MaxLinear Incorporated, USA)

Towards the Integration of TAPRIO-Based Scheduling With Centralized TSN Control
- Georgios Papathanail (University of Macedonia, Greece)
- Lefteris Mamatas (University of Macedonia, Greece)
- Panagiotis Papadimitriou (University of Macedonia, Greece)

TSNZeek: An Open-Source Intrusion Detection System for IEEE 802.1 Time-Sensitive Networking
- Doğanalp Ergenç (University Hamburg, Germany)
- Robin Schenderlein (University of Hamburg, Germany)
- Mathias Fischer (Universität Hamburg, Germany)

Sec4IoT Technical Session 1: Security for IoT Networks and Devices in 6G – I

Session Chair: José C. Ribeiro (Evotel Informatica SL, Spain)

Behavioral Biometrics for Mobile User Authentication: Benefits and Limitations
- Maria Papaioannou (Instituto de Telecomunicações, Portugal)
- Georgios Mantas (Instituto de Telecomunicações - Pólo de Aveiro, Portugal)
- Emmanouil Panaousis (University of Greenwich, United Kingdom, Great Britain)
- Aliyah Essop (University of Greenwich, United Kingdom, Great Britain)
- Jonathan Rodriguez (Instituto de Telecomunicações, Portugal)
- Victor Sucasas (Technology Innovation Institute, United Arab Emirates)

An IoT/IoMT Security Testbed for Anomaly-Based Intrusion Detection Systems
- Georgios Zachos (Instituto de Telecomunicações, Campus Universitário de Santiago, Portugal)
- Georgios Mantas (Instituto de Telecomunicações - Pólo de Aveiro, Portugal)
- Ismael Essop (University of Greenwich, United Kingdom, Great Britain)
- Kyriakos Porfyrakis (University of Greenwich, United Kingdom, Great Britain)
- Joaquim Bastos (Instituto de Telecomunicações, Portugal)
- Jonathan Rodriguez (Instituto de Telecomunicações, Portugal)

Sec4IoT Technical Session 2: Security for IoT Networks and Devices in 6G – II

Session Chair: José C. Ribeiro (Evotel Informatica SL, Spain)

A Tutorial on the Implementation of a Hyperledger Fabric-Based Security Architecture for IoMT
- Filippos Pelekoudas Oikonomou (Evotel Informática SL, Spain)
- José Ribeiro (Evotel Informatica SL, Spain)
- Georgios Mantas (University of Greenwich, United Kingdom, Great Britain)
- Firooz Bashashi (Evotel Informática SL, Spain)
- Georgia Sakellari (Greenwich of University, United Kingdom, Great Britain)
- Jonathan Gonzalez (Evotel Informática SL, Spain)

Federated Learning-Based In-Network Traffic Analysis on IoT Edge
- Mingyuan Zang (Technical University of Denmark, Denmark)
- Changgang Zheng (University of Oxford, United Kingdom, Great Britain)
- Tomasz Koziak (Netlight, Denmark)
- Noa Zilberman (University of Oxford, United Kingdom, Great Britain)
- Lars Dittmann (Technical University of Denmark, Denmark)

Overcoming New Technologies Challenges in IoT Security Labs: Strategies for Effective Adaptation
- Dimitrios Simopoulos (Democritus University of Thrace, Greece)
- Andreas Wolf (Akkodis Germany, Germany)

IOCRCI Technical Session 1: Security and resilience in IT/OT

Session Chair: Robert Kooij (Delft University of Technology, the Netherlands)

Learning to Walk: Benchmarking the Maturity of OT Security Control Standards and Guidelines
- Sam Maesschalck (Lancaster University, United Kingdom, Great Britain)
- Alexander Staves (Lancaster University, United Kingdom, Great Britain)
- Sam Maesschalck (Lancaster University, United Kingdom, Great Britain)
- Richard Derbyshire (Orange Cyberdefense, United Kingdom, Great Britain)
- Benjamin Green (Lancaster University, United Kingdom, Great Britain)
- David Hutchison (Lancaster University & InfoLab21, United Kingdom, Great Britain)

National roaming as a fallback or default?
- Lotte Weedage (University of Twente, The Netherlands)
- Syllas R. C. Magalhães (University of Twente, The Netherlands)
- Suzan Bayhan (University of Twente, The Netherlands)

Exploring the Quantitative Resilience Analysis of Cyber-Physical Systems
- Romain Dagnas (Institut de Recherche Technologique SystemX)
- Michel Barbeau (Carleton University, Canada)
- Maxime Boutin (Institut de Recherche Technologique SystemX)
- Joaquin Garcia-Alfaro (Institut Mines-Telecom, France)
- Reda Yaich (Institut de Recherche Technologique SystemX)