IFIP Networking 2018

May 14-16, 2018
Zürich, Switzerland

Program

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IFIP Networking 2018 General Chair's Welcome Message

Dear Participants of the 17th IFIP Networking 2018!

Exactly eighteen years ago the IFIP Networking conference history took off with its first instance on May 14, 2000 in Paris, France, forming at that point for the first time a joint event on formerly separated and since then integrated conferences on Broadband Communications (1995-1999), Performance of Communication Networks (1981-1998), and High Performance Networking (1987-1998). While IFIP Networking took place in the past for 11 times in Europe, for 3 times in North America, and twice in Asia, now the 17th IFIP Networking instance starts in Zürich, Switzerland. Thus, it is my pleasure to welcome you in my position as the IFIP Networking 2018 General Chair – and on behalf of the entire IFIP Networking Organizing Committee and Local Arrangements Team – to the 17th IFIP Networking 2018!

Since you are already holding this program in your hands, you have arrived by now safely to the beautiful location of Zürich, either by plane, train, or even car. Therefore, please find this program now at your hands as a guideline to your technical session planning for IFIP Networking 2018, the conference venue, information on the social event, conference services, and last but not least on lots of activities in and around Zürich. As you will have noted, the public transport toward the Swissôtel in Zürich-Oerlikon is most likely the very shortest one you may have ever seen for any conference you may participate in! The 8 minutes travel by train or S-Bahn (so called fast, short distance trains in Switzerland) from the train station of the Zürich Unique Airport (ZRH) to Oerlikon Bahnhof (station) and only an additional 60 m footpath from there to the hotel's entrance is not only a great coincidence, it is Zürich's dedication to offer a frequent, timely, reliable, and efficient public transport, running besides trains, S-Bahn, and tram lines also buses and boats on the same ticket!

And you will learn during IFIP Networking 2018 that this public transport is also working for IFIP Networking's social program, supported by IFIP Networking's provision of sponsored local transport ticket for 24 hours. Besides for its use for the social event, please check out on such ticket-wide travel options within Zürich's travel zone 110! Main details are available on the route map provided in your participants' welcome package. And for sure, do not hesitate to talk to the Zürich local team or the reception desk for more detailed inquiries.

During IFIP Networking 2018 you can enjoy as a registered participant (please wear always your badge for room access) the welcome and key note sessions, technical sessions, the poster and demo session, the panel, a modern hotel of up-to-date conference facilities, complimentary WLAN access, and a great setting for work, coffee breaks, and joint lunches.

Such an event would not be possible without you, the attendees and paper authors! Thus, thank you for being with us and presenting your work. But additionally, it is the great help and drive of the IFIP Networking 2018 Organizing Committee, who made sure that all of you do see this great program and nice location. Special thanks go here to the three TPC Co-chairs of IFIP Networking 2018: Claudio Casetti, Fernando Kuipers, and James P. G. Sterbenz.

Last but not least it is my pleasure to address many thanks to the sponsors of IFIP Networking 2018 especially the Communication Systems Group CSG of the Department of Informatics IfI, the University of Zürich UZH, the Canton of Zürich, and the City of Zürich, who help to make your experience of IFIP Networking 2018 a unique one! Also, IFIP Networking 2018 is pleased to acknowledge the support by IFIP TC6 and the technical co-sponsoring by the IEEE Computer Society. Thus again, the entire Zürich local arrangements team wishes you a very warm welcome, a highly successful conference, productive "in-between" meetings, new contacts and ideas, and some great days out in and around the city of Zürich!

Burkhard Stiller
IFIP Networking 2018 General Chair

IFIP Networking 2018 Program Chairs' Welcome Message

It is with great pleasure that we welcome all attendees of the 17th edition of IFIP Networking in Zürich, Switzerland. The main objective of IFIP Networking is to bring together members of the networking community from both academia and industry, to discuss recent advances in the broad and quickly evolving fields of computer and communication networks, to highlight key issues, identify trends, and develop a vision for Future Internet technology, operation, and use.

As in the past editions, IFIP Networking 2018 has attracted a large number of papers in four main areas: (1) Network Architectures, Applications and Services, (2) Network Modeling and Analysis, (3) Network Security and Privacy, and (4) Wireless Networking.

This year, we received 225 submissions from a total of 41 countries. At a time when all major conferences are vying to attract research works, the high number of this year's submissions confirms that IFIP Networking is a well-established, reputed venue for high quality papers.

The main technical program is the result of a very selective, rigorous two-step peer-review process by experts in the areas of the conference. With all papers receiving an average of 4.4 reviews (at least 3 reviews and some of them up to 6 reviews) plus a meta-review summarizing the online discussion, we were able to guarantee that the works that made it into the main program are of outstanding quality. Overall, we accepted 55 full papers, which corresponds to an acceptance ratio of around 24%. In addition, 8 papers were accepted as short presentation papers.

The technical program is complemented by three keynotes, namely "Blockchain for Cyber Physical Systems", "Flexibility Matters: On the Design and Evaluation of Softwarized Networks", and "Artificial Intelligence in Network Operations and Management", and a panel on "Security and Privacy in the Internet of Things", as well as by a poster/demo session.

We would like to thank all the members of the Organizing Committee who worked hard to make this conference a real success. First and foremost, we express our gratitude to Burkhard Stiller, the General Chair of IFIP Networking 2018, for his unflagging support and constant input. Of course, a special thanks is due to all authors who selected IFIP Networking 2018 as a platform to present their latest research results. Last, but not least, we would also like to acknowledge all TPC members and reviewers for their time in providing their rigorous, high-quality 1009 reviews.

Hopefully, you will find this program a source of inspiration of new ideas for your research and work. We encourage you to use the three days of the conference to discuss and create new connections with colleagues from all over the world. Finally, besides attending intellectually inspiring talks and discussions, make sure to enjoy Zürich!

Claudio Casetti
Fernando Kuipers
James P. G. Sterbenz

IFIP Networking 2018 Technical Program Co-chairs

IFIP Networking 2018 Program

Monday May 14, 2018

9.00 – 9.30 Welcome Session
General Chair: Burkhard Stiller
Dean of Faculty of Business, Economics, and Informatics, University of Zürich: Harald Gall
IFIP Networking TPC Co-chairs: Claudio Casetti, Fernando Kuipers, James P. G. Sterbenz

9.30 – 10.30 Keynote Session I
Salil Kanhere: *Blockchain for Cyber Physical Systems*

10.30 – 11.00 Coffee Break

11.00 – 12.40 Session 1A - Security and Resilience
George Geoffrey Michaelson, Matthew Roughan, Jonathan Tuke, Matt Wand, Randy Bush:
Rasch Analysis of HTTPS Reachability

Lumin Shi, Mingwei Zhang, Jun Li, Peter Reiher:
PathFinder: Capturing DDoS Traffic Footprints on the Internet

Jun Wu, Patrick Pak-Ching Lee, Qi Li, Lujia Pan, Jianfeng Zhang:
CellPAD: Detecting Performance Anomalies in Cellular Networks via Regression Analysis

Elias A. Doumith, Sawsan Al Zahr:
An M:N Shared Regenerator Protection Scheme in Translucent WDM Networks

11.00 – 12.40 Session 1B - Service Function Chaining
Fabien Duchene, David Lebrun, Olivier Bonaventure:
SRv6Pipes: Enabling In-network Bytestream Functions

Ahmed Abdelsalam, Stefano Salsano, Francois Clad, Pablo Camarillo, Clarence Filsfils:
SERA: SEgment Routing Aware Firewall for Service Function Chaining Scenarios

Matthias Rost, Stefan Schmid:
Charting the Complexity Landscape of Virtual Network Embeddings

Sara Ayoubi, Shihabur Rahman Chowdhury, Raouf Boutaba:
Breaking Service Function Chains with Khaleesi

12.40 – 13.40 Lunch Break

13.40 – 15.20 Session 2A - Measurements and Analysis
Ermias Andargie Walelgne, Setälä Kim, Vaibhav Bajpai,
Stefan Neumeier, Jukka M J Manner, Jörg Ott:
Factors Affecting Performance of Web Flows in Cellular Networks

Qian Zhou, Yang Chen, Chuanhao Ma, Fei Li, Yu Xiao, Xin Wang, Xiaoming Fu:
Measurement and Analysis of the Reviews in Airbnb

Meenakshi Syamkumar, Sathiya Kumaran Mani,
Ramakrishnan Durairajan, Paul Barford, Joel Sommers:
Wrinkles in Time: Detecting Internet-wide Events via NTP

Ruairí de Fréin:
State Acquisition in Computer Networks

13.40 – 15.20 Session 2B - Congestion Control

Dominik Scholz, Benedikt Jaeger, Lukas Schwaighofer,
Daniel Raumer, Fabien Geyer, Georg Carle:
Towards a Deeper Understanding of TCP BBR Congestion Control

Soheil Abbasloo, Tong Li, Yang Xu, H. Jonathan Chao:
Cellular Controlled Delay TCP (C2TCP)

Tristan Braud, Martin Heusse, Andrzej Duda:
The Virtue of Gentleness: Improving Connection Response Times with SYN Priority Active Queue Management

Roland Bless, Mario Hock, Martina Zitterbart:
Policy-Oriented AQM Steering

15.20 – 15.50 Coffee Break

15.50 – 17.30 Session 3A - Traffic Engineering

Davide Sanvito, Ilario Filippini, Antonio Capone, Stefano Paris, Jeremie Leguay:
Adaptive Robust Traffic Engineering in Software Defined Networks

Adriana Fernández-Fernández, Cristina Cervelló-Pastor,
Leonardo Ochoa-Aday, Paola Grosso:
An Online Power-Aware Routing in SDN with Congestion-Avoidance Traffic Reallocation

Reuven Cohen, Yuval Dagan, Gabi Nakibly:
Proactive Rerouting in Network Overlays

Seppo Hätönen, Petri Savolainen, Ashwin Rao, Hannu Flinck, Sasu Tarkoma:
SWIFT: Bringing SDN Based Flow Management to Commodity Wi-Fi Access Points

15.50 – 17.30 Session 3B - Multipath Communications

Liyang Sun, Guibin Tian, Guanyu Zhu, Yong Liu, Hang Shi, David Dai:
Multipath IP Routing on End Devices: Motivation, Design, and Performance

Tanya Shreedhar, Nitinder Mohan, Sanjit K Kaul, Jussi Kangasharju:
QAware: A Cross-Layer Approach to MPTCP Scheduling

17.45 Travel to Reception and Social Event
(by public transport in groups from the Swissôtel or privately at any time before)

18.15 – 19.00 Reception at "Zunfthaus zur Waag"
(see page 15 in this program booklet below for details)

19.00 – 22.00 Social Event at "Zunfthaus zur Waag"

Tuesday May 15, 2018

9.00 – 10.00 Keynote Session II

Wolfgang Kellerer: *Flexibility Matters: On the Design and Evaluation of Softwarized Networks*

10.00 – 10.30 Coffee Break

10.30 – 12.10 Session 4A - SDN Architectures

Viktoria Fodor, Muhammad Zeshan Naseer:
The Effect of Network Topology on the Control Traffic in Distributed SDN

Levente Csikor, Laszlo Toka, Márk Szalay, Gergely Pongrácz,
Dimitrios P. Pezaros, Gábor Rétvári:
HARMLESS: Cost-Effective Transitioning to SDN for Small Enterprises

Robert Krösche, Kashyap Thimmaraju, Liron Schiff, Stefan Schmid:
I DPID It My Way! A Covert Timing Channel in Software-Defined Networks

10.30 – 12.10 Session 4B - 5G Communications

Mohammad Nourifar, Francesco Devoti, Ilario Filippini:
Blockage-Robust 5G mm-Wave Access Network Planning

Chrysa Papagianni, Panagiotis Papadimitriou, John Baras:
Rethinking Service Chain Embedding for Cellular Network Slicing

Safwan Alwan, Ilhem Fajjari, Nadjib Aitsaadi:
D2D Multihop Energy-Efficient Routing and OFDMA Resource Allocation in 5G Networks

Misikir Gebrehiwot, Pasi Lassila, Samuli Aalto:
Dynamic Load Balancing in 5G HetNets for Optimal Performance-Energy Tradeoff

12.10 – 13.40 Lunch Break

13.40 – 15.20 Session 5A - Named Data Networking

JJ Garcia-Luna-Aceves, Ehsan Hemmati:
Making Name-Based Content Routing More Efficient than Link-State Routing

Jonnahtan Saltarin, Torsten Ingo Braun, Eirina Bourtsoulatze, Nikolaos Thomos:
PopNetCod: A Popularity-based Caching Policy for
Network Coding-enabled Named Data Networking

Karim A. Khalil, Azeem Aqil, Srikanth V. Krishnamurthy, Tarek Abdelzaher, Lance Kaplan:
NEST: Efficient Transport of Data Summaries over Named Data Networks

Chavoosh Ghasemi, Hamed Yousefi, Kang Shin, Beichuan Zhang:
MUCA: New Routing for Named Data Networking

13.40 – 15.20 Session 5B - Wireless and Mobile Networks

Mohammed Amer, Anthony Busson, Isabelle Guérin Lassous:
Association Optimization in Wi-Fi Networks based on the Channel Busy Time Estimation

Marcelo M Carvalho, JJ Garcia-Luna-Aceves:
Carrier-Sense Multiple Access with Transmission Acquisition (CSMA/TA)

Alberto Ceselli, Marco Fiore, Angelo Furno, Marco Premoli, Stefano Secci, Razvan Stanica:
Prescriptive Analytics for MEC Orchestration

Nesrine Ben Khalifa, Amal Benhamiche, Alain Simonian, Marc Bouillon:
Profit and Strategic Analysis for MNO-MVNO Partnership

15.20 – 15.50 Coffee Break

15.50 – 17.30 Session 6A - Data Center and Overlay Networks

Soheil Abbasloo, Yang Xu, H. Jonathan Chao:
HyLine: A Simple and Practical Flow Scheduling for Commodity Datacenters

Céline Comte:
Dynamic Load Balancing with Tokens

Pradeeban Kathiravelu, Marco Chiesa, Pedro de B Marcos, Marco Canini, Luís Veiga:
Moving Bits with a Fleet of Shared Virtual Routers

Martijn De Vos, Johan Pouwelse:
Real-time Money Routing by Trusting Strangers with Your Funds

15.50 – 17.30 Session 6B - Virtualization and Resource Sharing
Matthias Rost, Stefan Schmid:
Virtual Network Embedding Approximations: Leveraging Randomized Rounding

Johannes Zerwas, Patrick Kalmbach, Carlo Fuerst, Arne Ludwig,
Andreas Blenk, Wolfgang Kellerer, Stefan Schmid:
Ahab: Data-Driven Virtual Cluster Hunting

Vamsi Addanki, Leonardo Linguaglossa, James Roberts, Dario Rossi:
Controlling Software Router Resource Sharing by Fair Packet Dropping

Wednesday May 16, 2018

9.00 – 10.00 Keynote Session III
Jürgen Quitteck: *Artificial Intelligence in Network Operations and Management*

10.00 – 11.00 Panel Session
Organized by James P. G. Sterbenz: *Security and Privacy in the Internet of Things*

11.00 – 12.10 Demonstration and Poster Session combined with Coffee Break
Ahmed Abdelsalam:
Demo: Chaining of Segment Routing Aware and Unaware Service Functions

Fred Aklamanu, Sabine Randriamasy, Eric Renault, Imran Latif, Abdelkrim Hebbar,
Alberto Contem Bilal Al Jamal, Warda Hamdaoui:
Demo: Intent-Based 5G IoT Application Slice Energy Monitoring

The An Binh Nguyen, Christian Klos, Christian Meurisch, Patrick Lampe:
Demo: Enabling In-Network Processing utilizing Nearby Device-to-Device Communication

Vamsi Addanki, Leonardo Linguaglossa, Jim Roberts, Dario Rossi:
Demo: Controlling Software Router Resource Sharing by Fair Packet Dropping

Marie Schaeffer, Roman Naumann, Stefan Dietzel, Björn Scheuermann:
Poster: Impact of Prioritized Network Coding on Sensor Data Collection in Smart Factories

Sina Rafati Niya, Burkhard Stiller:
Poster: Design and Evaluation of a Time Efficient Vertical Handoff Algorithm between LTE-A and IEEE 802.11ad Wireless Networks

Corinna Schmitt, Dominik Bünzli, Burkhard Stiller:
Poster: WebMaDa 2.0 - Automated Handling of User Requests

12.10 – 13.40 Lunch Break

13.40 – 15.20 Session 7A - Network Models and Algorithms

Fang Dong, Kui Wu, Venkatesh Srinivasan:
A New Dependence Model for Heterogeneous Markov Modulated Poisson Processes

Paul Nikolaus, Jens Schmitt:
Improving Output Bounds in the Stochastic Network Calculus Using Lyapunov's Inequality

Marie Schaeffer, Roman Naumann, Stefan Dietzel, Björn Scheuermann:
Hierarchical Layer Selection with Low Overhead in Prioritized Network Coding

Kelong Cong, Zhijie Ren, Johan Pouwelse:
A Blockchain Consensus Protocol With Horizontal Scalability

13.40 – 15.20 Session 7B - Content Distribution

Tilak Varisetty, Markus Fidler, Matthias Ueberheide, Marcus Magnor:
On the Delay Performance of Browser-based Interactive TCP Free-viewpoint Streaming

Felix Weinrank, Irene Rüngeler, Michael Tüxen, Erwin P. Rathgeb:
Alternative Handshake Mechanism for the Stream Control Transmission Protocol

Eman Ramadan, Pariya Babaie, Zhi-Li Zhang:
A Framework for Evaluating Caching Policies in a Hierarchical Network of Caches

Sukhpreet Kaur Khangura, Markus Fidler, Bodo Rosenhahn:
Neural Networks for Measurement-based Bandwidth Estimation

15.20 – 15.50 Coffee Break

15.50 – 16.50 Session 8A - Short Presentation Papers I

Slađana Jošilo, György Dán:
Decentralized Scheduling for Offloading of Periodic Tasks in Mobile Edge Computing

Yue Cao, Laiping Zhao, Rongqi Zhang, Yanan Yang, Xiaobo Zhou, Keqiu Li:
Experience-Availability Analysis of Online Cloud Services using Stochastic Models

Quentin De Coninck, Olivier Bonaventure:
Tuning Multipath TCP for Interactive Applications on Smartphones

Saeed Akhoondian Amiri, Klaus-Tycho Foerster,
Riko Jacob, Mahmoud Parham, Stefan Schmid:
Waypoint Routing in Special Networks

15.50 – 16.50 Session 8B - Short Presentation Papers II

The An Binh Nguyen, Marius Rettberg-Päplow, Christian Meurisch, Tobias Meuser:
Complex Services Offloading in Opportunistic Networks

Sanaz Taheri Boshrooyeh, Alptekin Küpçü, Oznur Ozkasap:
PPAD: Privacy Preserving Group-Based ADvertising in Online Social Networks

Jawad Manzoor, Ramin Sadre, Idilio Drago, Llorenç Cerdà-Alabern:
Is There a Case for Parallel Connections with Modern Web Protocols?

Vadim Kirilin, Sergey Gorinsky:
A Protocol-Ignorance Perspective on Incremental Deployability of Routing Protocols

16.50 End of IFIP Networking 2018 in Zürich, Switzerland

IFIP Networking 2018 Keynotes

Keynote I: *Blockchain for Cyber Physical Systems*

Salil Kanhere, University of New South Wales, Sydney, Australia

In Cyber Physical Systems (CPS), computing elements coordinate and communicate with sensors, which monitor cyber and physical indicators, and actuators, which modify the cyber and physical environment where they are run. Current CPS ecosystems rely on centralized, brokered communication models, otherwise known as the client-server paradigm. All devices are identified, authenticated, and connected through cloud servers. The data collected by devices is stored in the cloud for further processing. While this model has connected generic computing devices for decades and will continue to support small-scale CPS networks as we see them today, it will not be able to respond to the growing needs of the large-scale CPS ecosystems of tomorrow with billions of connected devices. Cloud servers will remain a bottleneck and point of failure that can disrupt the entire network. This is especially important as critical services and infrastructure such as healthcare, electric grids, logistics, and transportation become dependent on CPS. The current stove-piped architecture has also created isolated data silos, where users have limited control over their data and how it is used. Users have to trust the cloud and application providers and have no choice but to rely on their promises of security and availability.

This keynote will explore how the Blockchain (BC) technology has the potential to overcome the aforementioned challenges. BC is an immutable timestamp ledger of blocks that is used for storing and sharing data in a distributed manner. The data stored might be payment history, *e.g.*, Bitcoin, or a smart contract or even personal data. In recent years, BC has attracted tremendous attention from practitioners and academics in different disciplines (including law, finance, and computer science) due to its salient features, which include decentralization, immutability, auditability, security, and privacy. Thus, the talk will specifically consider three key aspects of CPSes: (i) Internet of Things, (ii) Intelligent Transportation, and (iii) Supply Chain and will explain relevant concepts, will review the state-of-the-art, will present representative solutions, and will discuss open challenges.

Prof. Dr. Salil Kanhere received his M.S. and Ph.D. degrees, both in Electrical Engineering, from Drexel University, Philadelphia, U.S.A. He is an Associate Professor in the School of Computer Science and Engineering at UNSW Sydney, Australia. He is also a conjoint researcher at Data61 CSIRO, Faculty Associate at Institute of Infocomm Research Singapore, and on the advisory board of two technology start-ups.

His research interests include Internet of Things, pervasive computing, blockchain, crowdsourcing, data analytics, privacy, and security. He has published over 180 peer-reviewed articles and delivered over 20 tutorials and keynote talks on these research topics. He has received 4 Best Paper Awards. His research has been featured on ABC News Australia, Forbes, Wired, ZDNET, MIT Technology Review, IEEE Spectrum and other media outlets. Salil serves on the Steering Committee of IEEE LCN and is the program co-chair for IEEE WoWMoM 2018 and ACM MSWiM 2018. He regularly features on the organizing committee of a number of IEEE and ACM international conferences. He is on the Editorial Board of Elsevier's Pervasive and Mobile Computing and Computer Communications and on the Executive Committee of the IEEE Computer Society's Technical Committee on Computer Communications (TCCC). Salil is a Senior Member of both the IEEE and the ACM. He is a recipient of the Alexander von Humboldt Research Fellowship.

Keynote II: *Flexibility Matters: On the Design and Evaluation of Softwarized Networks*

Wolfgang Kellerer, Technical University of Munich (TUM), Germany

In order to address network dynamics and highly varying requirements, flexibility has emerged as a key property for networks to cope with increasing dynamics and to be prepared for future demands. Softwarized networks including concepts such as Network Virtualization, Software Defined Networking and Network Function Virtualization promise flexibility. However, so far flexibility is mainly used as a qualitative advantage for a certain design choice where the meaning of flexibility is varying a lot in literature. To provide a better understanding of how to design flexible networks, we propose a definition for flexibility and present an approach for a quantitative measure of flexibility in softwarized networks. In our proposal, we refer to flexibility as the ability to support new requests, *e.g.*, changes in the requirements or new traffic distributions, in a timely manner. We illustrate with use case studies for function placement and SDN resilience, how this measure can be used to evaluate and compare different network designs quantitatively. To address adaptation time in flexible networks, we further present approaches to speed up the execution of algorithms based on machine learning. Examples include virtual network embedding and function placement. With our proposed approach for the definition and evaluation of flexibility, we intend to stimulate the discussion towards a more quantitative analysis of softwarized networks and beyond.

Prof. Dr. Wolfgang Kellerer is a full professor with the Technical University of Munich (TUM), Germany, heading the Chair of Communication Networks at the Department of Electrical and Computer Engineering. Before, he was for over ten years with NTT DOCOMO's European Research Laboratories. His last position was head of the research department for wireless communication and mobile networking.

His current research focuses on flexible networking based on SDN/NFV and wireless M2M networking towards 5G. He received his Dr.-Ing. degree (Ph.D.) and his Dipl.-Ing. degree (Master) from TUM, in 1995 and 2002, respectively. His research resulted in over 200 publications and 35 granted patents. In 2015, he has been awarded with a Consolidator Grant from the European Commission for his project FlexNets: "Quantifying Flexibility in Communication Networks". He is a member of ACM, VDE ITG, and a Senior Member of IEEE.

Keynote III: Artificial Intelligence in Network Operations and Management

Jürgen Quittek, NEC Laboratories Europe, Germany

Complexity of communication networks and their management and operations is continuously growing. At the same time, the capabilities of Artificial Intelligence (AI) technologies, in particular of deep machine learning, are growing rapidly and offer a way to deal with the complexity. This keynote gives a brief overview of the history of AI technologies and shows how recent advancements provide powerful means of analysis and prediction suited to address several of today's challenges in network operations and management. Several examples illustrate the variety of potential applications of AI to networking. The outlook will address upcoming technology trends, such as reinforcement learning, representation learning, and automated reasoning.

Dr. Jürgen Quittek is Managing Director of the NEC Laboratories Europe in Heidelberg, Germany. He received his degree in communications engineering from RWTH Aachen in 1989 and his Ph.D. from Hamburg University of Technology (TUHH) in 1996. After a postdoctoral year in Berkeley, California, he joined the NEC Laboratories in 1997. In 2000 he was a visiting professor at Freie Universität Berlin.

He conducted research in the areas of neural networks, network management, data security, software-defined networking, energy-efficient communications, and 5G mobile networks, and he served as TCP chair and member of many conferences and workshops. As working group chair, rapporteur, and author he contributed to communication standards at ETSI, IETF, and ONF. His current research interests also include artificial intelligence and the Internet of Things (IoT).

IFIP Networking 2018 Panel

Security and Privacy in the Internet of Things

Panel Chair: James P.G. Sterbenz, The University of Kansas, U.S.A., and Lancaster University, U.K.

The Internet of Things (IoT) has become not only a hot topic for research, but as usual, is being deployed before we understand the implications of this technology, and without developed usability, security, privacy, resilience, survivability, controllability, accountability, and manageability.

This panel discusses whether IoT can or will be deployed with acceptable security and privacy for users and society, and whether lessons can be learned from the current ubiquitous mobile Internet. Are we racing towards a machine-assisted utopia or a machine-controlled dystopia?

IFIP Networking 2018 Technical Program Committee

Nadjib Aitsaadi, LIGM/CNRS, France
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José Jair Santanna, University of Twente, The Netherlands
Stefan Schmid, Aalborg University, Denmark
Jens Schmitt, University of Kaiserslautern, Germany
Jürgen Schönwälder, Jacobs University Bremen, Germany
Henning Schulzrinne, Columbia University, U.S.A.
Cheta Singhal, IIT Kharagpur, India
Christoph Sommer, Paderborn University, Germany
Yang Song, IBM Research, U.S.A.
Vasilis Sourlas, University College London, U.K.
Otto Spaniol, RWTH Aachen University, Germany
Razvan Stanica, INSA Lyon, France
Ioannis Stavrakakis, National and Kapodistrian University of Athens, Greece
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Steve Uhlig, Queen Mary, University of London, U.K.
Dan Wang, Wichita State University, U.S.A.
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Fan Wu, Shanghai Jiao Tong University, China
Di Wu, Sun Yat-sen University, China
Kui Wu, University of Victoria, Canada
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Many thanks are addressed to the entire team of all IFIP Networking 2018 Technical Program Committee members, without whom a high quality program could not be reached.

IFIP Networking 2018 Local Logistics

Location and Registration — IFIP Networking 2018 will be held at the Swissôtel Zürich, Am Marktplatz Oerlikon, Schulstrasse 44,CH-8050 Zürich-Oerlikon, Switzerland, Phone: +41 44 317 31 11, Fax: +41 44 312 44 68.

Upon entering the reception area of the Swissôtel signs toward the event's rooms are posted. The registration will be open from 8.15 hours on Monday until 14.00 hours on Wednesday and is located in the "Lakeside Ballroom" at the first floor. All presentations and keynotes will be given in the two halls labeled "Genf" and "Montreux", just behind the registration desk.

Coffee Breaks — In-between major sessions drinks and snacks will be served in the "Lakeside Ballroom". Note that the Demonstration and Poster Session on Wednesday is combined with the morning coffee break to enable a perfect setting for many interactions to take place.

Lunch Breaks — Lunch will be offered on all three conference days in form of a large buffet style, self-serve lunch at the "Lakeside Ballroom".

Internet Access — You will be able to access e-mails and the Web in a convenient manner while setting your WLAN settings as follows. Note that this access is unencrypted:

SSID: Swissotel-Meeting
Password: Swissotel05

IFIP Networking 2018 Proceedings Access — You are able to access the IFIP Networking 2018 proceedings as a single PDF file at our local server by utilizing ***ONLY*** the following URL http://www.networking2018.com in combination with the following access credentials:

SSID: Networking2018
Password: Net2018

After IFIP Networking 2018 will have taken place, access to its proceedings will become available at the IFIP TC6 Digital Library http://dl.ifip.org/db/conf/networking/index.html as well as within IEEE Xplore. For further technical details or in case of problems please contact us.

IFIP Networking 2018 Reception and Social Event

Food for the Body — The reception and social event will be held at the Zürich Guild House named "Zunfthaus Zur Waag", Münsterhof 8, CH—8001 Zürich, Phone +41 44 216 99 66.

The "Zunfhaus zur Waag" offers a very stylish atmosphere of the old city of Zürich, while the building itself dates from 1315. It is facing directly the Fraumünster Church with its famous Chagall windows right at the Münsterhof.

Be in time for the IFIP Networking 2018 social event and enjoy the relaxing reception (a Swiss-style Apéro) before the dinner starts!

IFIP Networking 2018 - Program at a Glance
Zürich, Switzerland, at the Swissôtel, Zürich-Oerlikon

Time	Monday May 14, 2018		Time	Tuesday May 15, 2018		Time	Wednesday May 16, 2018	
8.15	Registration		8.15	Registration		8.15	Registration	
9.00	Welcome: General Chair, Department's Dean, TPC Co-chairs		9.00	**Keynote II**		9.00	**Keynote III**	
9.30	**Keynote I**			Flexibility Matters: On the Design and Evaluation of Softwarized Networks			Artificial Intelligence in Network Operations and Management	
	Blockchain for Cyber Physical Systems		10.00	Coffee Break		10.00	**Panel**	
10.30	Coffee Break		10.30	**Session 4A**	**Session 4B**		Security and Privacy in the Internet of Things	
11.00	**Session 1A**	**Session 1B**		SDN Architectures	5G Communications	11.00	Coffee Break and **Demonstration and Poster Session**	
	Security and Resilience	Service Function Chaining	12.10	Lunch Break		12.10	Lunch Break	
12.40	Lunch Break		13.40	**Session 5A**	**Session 5B**	13.40	**Session 7A**	**Session 7B**
13.40	**Session 2A**	**Session 2B**		Named Data Networking	Wireless and Mobile Networks		Network Models and Algorithms	Content Distribution
	Measurements and Analysis	Congestion Control	15.20	Coffee Break		15.20	Coffee Break	
15.20	Coffee Break		15.50	**Session 6A**	**Session 6B**	15.50	**Session 8A**	**Session 8B**
15.50	**Session 3A**	**Session 3B**		Data Center and Overlay Networks	Virtualization and Resource Sharing		Short Presentation Papers I	Short Presentation Papers II
	Traffic Engineering	Multipath Communications	17.30	End of day		16.50	End of day	
17.30	Travel to Reception and Social Event							
18.15	Reception							
19.00	Social Event							
22.00	End of day							