ITC 28 Program

Program of the 28th International Teletraffic Congress

Tobias Hoßfeld, Brian Mark, Gary Chan, Andreas Timm-Giel
(ITC 28 TPC Co-Chairs)

Version of Tuesday 12th July, 2016

Tuesday 13th September, 2016

09:00 − 09:30   Opening by Phuoc Tran-Gia

09:30 − 10:30   **Keynote** by Nikhil Jain (Qualcomm Technologies)
Internet of Everything: Engineering Challenges and Opportunities

10:30 − 11:00   Coffee break

11:00 − 12:20   **Session 1.A: Clouds and Data Centers**
Offering Resilient and Bandwidth Guaranteed Services in Multi-Tenant Cloud Networks: Harnessing the Sharing Opportunities by Hyame Assem Alameddine; Sara Ayoubi; Chadi Assi

Dynamic Virtual Network Traffic Engineering with Energy Efficiency in Multi-Location Data Center Networks by Mirza Mohd Shahriar Maswood; Chris Develder; Edmundo Madeira; Deep Medhi

An Energy-Aware Embedding Algorithm for Virtual Data Centers by Tran Manh Nam; Nguyen Van Huynh; Le Quang Dai; Nguyen Huu Thanh

Session 1.B: Traffic and Network Management
Disaster Avoidance Control against Tsunami by Phuong Nga Tran; Hiroshi Saito

Building a Low Latency Linux Software Router by Alexander Beifuß; Torsten M. Runge; Daniel Raumer; Paul Emmerich; Bernd E. Wolfinger; Georg Carle

Traffic-Driven Implicit Buffer Management − Delay Differentiation Without Traffic Contracts by Martin Karsten; Daniel S. Berger; Jens Schmitt

12:20 − 13:45   Lunch

13:45 − 15:15   **Session 2: Wireless**
Full Demo 1: *Self-Optimization of Software Defined Radios Through Evolutionary Algorithms* by Zubair Shaik; André Puschmann; Andreas Mitschele-Thiel

Opportunistic Channel Estimation for Implicit 802.11af MU-MIMO by Ryan E. Guerra; Narendra Anand; Clayton Shepard; Edward W. Knightly

DiVote: A Distributed Voting Protocol for Mobile Device-to-Device Communication by Peter Danielis; Sylvia T. Kouyoumdjieva; Gunnar Karlsson

15:15 − 15:45   Coffee break

Tuesday 13th September, 2016 (cont.)

15:45 − 17:05   **Session 3.A: Cellular**

Joint Optimization of User Association and User Satisfaction in Heterogeneous Cellular Networks by Farah Moety; Mustapha Bouhtou; Taoufik En-Najjary; Ridha Nasri

Joint Resource Allocation and User Association for Heterogeneous Cloud Radio Access Networks by Ying Loong Lee; Li-Chun Wang; Teong Chee Chuah; Jonathan Loo

Performance-Oriented Association in Large Cellular Networks with Technology Diversity by Abishek Sankararaman; Jeong-woo Cho; François Baccelli

Session 3.B: Video Streaming

Bridging the Gap Between QoE and User Engagement in HTTP Video Streaming by Christian Moldovan; Florian Metzger

A Markov Model for Evaluating Resource Sharing Policies for DASH Assisting Network Elements by Jan Willem Kleinrouweler; Sergio Cabrero; Rob van der Mei; Pablo Cesar

Mobile Live Video Upstreaming by Philip Lundrigan; Mojgan Khaledi; Makito Kano; Naveen Dasa Subramanyam; Sneha Kasera

18:30 − 20:00   Welcome Reception

Wednesday 14th September, 2016

09:00 − 10:00   **Keynote** by Wolfgang Kellerer (Technical University of Munich, Germany)
Towards Flexible Networking in Dynamically Changing Environments

10:00 − 10:30   Full Demo 2: *PlanetIgnite: A Self-Assembling, Lightweight, Infrastructure-as-a-Service Edge Cloud* by Andy Bavier; Rick McGeer; Glenn Ricart

10:30 − 11:00   Coffee break

11:00 − 12:20   **Session 4.A: Caching Strategies**
Stochastic Dynamic Cache Partitioning for Encrypted Content Delivery by Andrea Araldo; György Dán; Dario Rossi

Access-time Aware Cache Algorithms by Giovanni Neglia; Damiano Carra; Mingdong Feng; Vaishnav Janardhan; Pietro Michiardi; Dimitra Tsigkari

Asymptotically Exact TTL-Approximations of the Cache Replacement Algorithms LRU(m) and h-LRU by Nicolas Gast; Benny Van Houdt

Session 4.B: Performance Analysis
Meeting Soft Deadlines in Single- and Multi-Server Systems by Esa Hyytiä; Rhonda Righter; Jorma Virtamo

Performance Analysis of CoDel and PIE for Saturated TCP Sources by Fabian Schwarzkopf; Sebastian Veith; Michael Menth

Stochastic Upper and Lower Bounds for General Markov Fluids by Florin Ciucu; Felix Poloczek; Jens Schmitt

12:20 − 13:45   Lunch

13:45 − 15:15   **Session 5: Demo Session**
Demo: Resilient Integration of Distributed High-Performance Zones into the BelWue Network Using OpenFlow by Mark Schmidt; Robert Finze; Daniel Reutter; Michael Menth

Demonstrating a Personalized Secure-By-Default Bring Your Own Device Solution Based on Software Defined Networking by Steffen Gebert; Thomas Zinner; Nicholas Gray; Raphael Durner; Claas Lorenz; Stanislav Lange

Demonstrating Context-Aware Services in the MobilityFirst Future Internet Architecture by Francesco Bronzino; Dipankar Raychaudhuri; Ivan Seskar

jLISP: An Open, Modular and Extensible Java-Based LISP Implementation by Andreas Stockmayer; Mark Schmidt; Michael Menth

Network as a Service − A Demo on 5G Network Slicing by Rastin Pries; Hans-Jochen Morper; Nandor Galambosi; Michael Jarschel

Security of Distributed Container Based Service Clustering with Hypriot Cluster Lab by Marcel Großmann; Andreas Eiermann

15:15 − 15:45   Coffee break

15:45 − 17:05   **Session 6.A: Softwarization**

Sector: TCAM Space Aware Routing on SDN by Sai Qian Zhang; Qi Zhang; Ali Tizghadam; Byungchul Park; Hadi Bannazadeh; Alberto Leon-Garcia; Raouf Boutaba

Port Based Capacity Extensions (PBCEs): Improving SDNs Flow Table Scalability by Robert Bauer; Martina Zitterbart

Performance Modeling of Softwarized Network Functions Using Discrete-Time Analysis by Steffen Gebert; Thomas Zinner; Stanislav Lange; Christian Schwartz; Phuoc Tran-Gia

Session 6.B: Information and Social Networks

Cache the Queues: Caching and Forwarding in ICN From a Congestion Control Perspective by Dinh Nguyen; Kohei Sugiyama; Atsushi Tagami

Optimizing Time to Exhaustion in Service Providers Using Information-Centric Networking by Ali Shariat; Ali Tizghadam; Alberto Leon-Garcia

Binary Opinion Dynamics with Biased Agents and Agents with Different Degrees of Stubbornness by Arpan Mukhopadhyay; Ravi R. Mazumdar; Rahul Roy

19:00 − 23:00   Social Event

Thursday 15th September, 2016

09:00 − 10:00   **Keynote** by Eitan Altman (INRIA Sophia Antipolis, France)
Dynamic Games for Analyzing Competition in the Internet

10:00 − 10:30   Full Demo 3: *LiveTalk: A Framework for Collaborative Browser-Based Replicated-Computation Applications* by Matthew Hemmings; Daniel Ingalls; Robert Krahn; Rick McGeer; Glenn Ricart; Marko Röder; Ulrike Stege

10:30 − 11:00   Coffee break

11:00 − 12:20   **Session 7.A: Measurements**
IntegraTag: a Framework for High-Fidelity Web Client Measurement by Charles Thomas; Jeff Kline; Paul Barford

CLUE: Clustering for Mining Web URLs by Andrea Morichetta; Enrico Bocchi; Hassan Metwalley; Marco Mellia

Testing for Traffic Differentiation with ChkDiff: The Downstream Case by Riccardo Ravaioli; Guillaume Urvoy-Keller; Chadi Barakat

Session 7.B: Caching
ModelGraft: Accurate, Scalable, and Flexible Performance Evaluation of General Cache Networks by Michele Tortelli; Dario Rossi; Emilio Leonardi

Distributed Algorithms for Content Caching in Mobile Backhaul Networks by Valentino Pacifici; Slađana Jošilo; György Dán

Performance Evaluation for New Web Caching Strategies Combining LRU with Score Based Object Selection by Gerhard Hasslinger; Kostas Ntougias; Frank Hasslinger; Oliver Hohlfeld

12:20 − 13:45   Lunch

13:45 − 15:15   **Session 8: Virtualization**
A Power Efficient and Robust Virtual Network Functions Placement Problem by Antonio Marotta; Andreas J. Kassler

Elastic Network Service Provisioning with VNF Auctioning by Mathis Obadia; Mathieu Bouet; Vania Conan; Luigi Iannone; Jean-Louis Rougier

15:15 − 15:45   Closing Session

Workshop on Programmability for Cloud Networks and Applications (PROCON)

Monday 12th September, 2016

11:00 − 12:00   **Keynote** by Robert Birke (IBM Research − Zurich, Switzerland)
Ensuring Performance in the Virtual Environment

12:00 − 12:30   *ZOOM: Lightweight SDN-based Elephant Detection* by Steffen Gebert; Stefan Geißler; Thomas Zinner; Anh Nguyen-Ngoc; Stanislav Lange; Phuoc Tran-Gia

12:30 − 13:00   Short Lunch & Coffee Break

13:00 − 14:30   *A Novel Reconfigurable-by-Design Highly Distributed Applications Development Paradigm Over Programmable Infrastructure* by Panagiotis Gouvas; Constantinos Vassilakis; Eleni Fotopoulou; Anastasios Zafeiropoulo

On the Necessity of Accounting for Resiliency in SFC by Ghada Moualla; Thierry Turletti; Mathieu Bouet; Damien Saucez

Automated Decision Making Methods for the Multi-objective Optimization Task of Cloud Service Placement by Michael Seufert; Stanislav Lange; Markus Meixner

14:30 − 15:00   Coffee Break

15:00 − 15:30   Invited Demonstration & Live Talk: *An SDN/NFV Telco Operator Platform for Multipoint Video Live Streaming: Design and Prototyping* by Giovanni Schembra; Marcello Natale Melita

15:30 − 16:30   *OpenVolcano: An Open-Source Software Platform for Fog Computing* by Roberto Bruschi; Paolo Lago; Guerino Lamanna; Chiara Lombardo; Sergio Mangialardi

An Analytical Model to Design Processor Sharing for SDN/NFV Nodes by Giuseppe Faraci; Alfio Lombardo; Giovanni Schembra

16:30 − 16:45   Closing

2016 International Workshop on Quality of Experience Centric Management (QCMan)

Friday 16$^{\text{th}}$ September, 2016

09:00 − 10:00   **Keynote** by Alexander Raake (TU Ilmenau, Germany)
What's the Number? Monitoring IP-based Video with Standardized QoE Models

10:00 − 10:30   *Multi-Agent Systems for Personalized QoE-Management* by Amro Najjar; Xavier Serpaggi; Christophe Gravier; Olivier Boissier

10:30 − 11:00   Coffee Break

11:00 − 12:30   *YouTube Can Do Better: Getting the Most Out of Video Adaptation* by Christian Moldovan; Christian Sieber; Poul Heegaard; Wolfgang Kellerer; Tobias Hoßfeld

Towards a Framework for Comparing Application-Network Interaction Mechanisms by Susanna Schwarzmann; Thomas Zinner; Ognjen Dobrijević

Impact of Variances on the QoE in Video Streaming by Christian Moldovan; Tobias Hoßfeld

12:30 − 13:30   Lunch

13:30 − 14:00   *Application-Aware Infrastructure Clustering for Cloud Service Placement to Enhance User QoE* by Dmitrii Chemodanov; Prasad Calyam

14:00 − 14:40   Short Paper: *Insensitivity to Network Delay: Minecraft Gaming Experience of Casual Gamers* by Oliver Hohlfeld; Hannes Fiedler; Enric Pujol; Dennis Guse

Short Paper: *Correlating QoE and Technical Parameters of an SAP System in an Enterprise Environment* by Kathrin Borchert; Matthias Hirth; Thomas Zinner; Decebal Constantin Mocanu

14:40 − 15:00   Coffee Break

15:00 − 16:00   Panel: *What Are Challenges in Managing the QoE of the Upcoming Wave of Immersive Media-rich Applications?*

16:00 − 16:15   Closing

ITC 28 Sponsors

The International Advisory Committee (IAC) of the ITC has decided to offer a number of travel grants that will be available to support full-time students for attending ITC 28. The IAC financially supports three prestigious awards for ITC 28: Best Paper Award, Best Student Paper Award, Best Demo Award.

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