

2018 15th IEEE Annual Consumer Communications & Networking Conference (CCNC 2018)

**Las Vegas, Nevada, USA
12-15 January 2018**



**IEEE Catalog Number: CFP18CCN-POD
ISBN: 978-1-5386-4791-2**

**Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP18CCN-POD
ISBN (Print-On-Demand):	978-1-5386-4791-2
ISBN (Online):	978-1-5386-4790-5
ISSN:	2331-9852

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Program

Tutorial 9: Tutorial #9 Scalable Approaches to Network Protocol and Architectures Design in New Generation Wireless Systems: Current State and Future Directions

Tutorial 1: Tutorial #1 2020: Toward Practical Quantum Networks

Tutorial 2: Tutorial #2 Intent-based Network Programmability

Tutorial 3: Tutorial #3 Low Power Wide Area Networks

Tutorial 4: Tutorial #4 Connected Vehicles in the 5G Era

WS: 3rd Workshop on Ambient Assisted Living and Health

RehabPartner: Motion Tracking Assistant Using a Novel Complementary Feedback Filter 1

Shao Loong Lim (Nanyang Technological University Singapore, Singapore); Seanglidet Yean, Bu Sung Lee and Chai Kiat Yeo (Nanyang Technological University, Singapore)

Development and evaluation of a Healthy Coping voice interface application using the Google Home for elderly patients with Type 2 Diabetes 7

Amy Cheng (Auburn University, USA); Vaishnavi Raghavaraju (University Of Cincinnati, USA); Jayanth Kanugo (University Of Missouri, USA); Yohanes Handrianto and Yi Shang (University of Missouri, USA)

Tacit Computing and its Application for Open IoT Era 12

Misao Kataoka (NTT, Japan); Naoto Hoshikawa (NTT Network Service Systems Laboratories & NTT, Japan); Hirofumi Noguchi and Tatsuya Demizu (Nippon Telegraph and Telephone Corporation, Japan); Yoji Yamato (NTT Corporation, Japan)

Coffee: Networking & Coffee Break

Tutorial 1: Tutorial #1 2020: Toward Practical Quantum Networks

Tutorial 2: Tutorial #2 Internet based Network Programmability

Tutorial 3: Tutorial #3 Low Power Wide Area Networks

Tutorial 4: Tutorial #4 Connected Vehicles in the 5G Era

WS: 3rd Workshop on Ambient Assisted Living and Health

A Fuzzy Control-based Approach for the Selection of Health Interventions 17

Juan M Calderon (Universidad Santo Tomas, USA); Luis G Jaimes (Florida Polytechnic University, USA)

Crowd-based positioning of UAVs as Access Points 23

Dorin Rautu and Riadh Dhaou (IRIT/ENSEEIH, University of Toulouse, France); Emmanuel Chaput (Irit-Enseeiht, France)

Utilization-based Parking Space Suggestion in Smart City 29

Chia-Ying Lin, Yi-Lung Lu, Meng-Hsun Tsai and Hui-Ling Chang (National Cheng Kung University, Taiwan)

L1: Lunch (on your own)

Tutorial 3: Tutorial #3 Low Power Wide Area Networks

Tutorial 5: Tutorial #5 Towards Programmable Mobile Networks and Network Slicing

Tutorial 6: Tutorial #6 Virtualization of IoT and Big Data Paradigm in Consumer Application

WS: 2nd Workshop on Game Theory in Computer Communications

The Elimination-Selection Based Algorithm for Efficient Resource Discovery in Internet of Things Environments 35

Luiz Nunes (Universidade de São Paulo, Brazil); Charith Perera (Newcastle University, United Kingdom (Great Britain)); Julio Cezar Estrella (USP - University of São Paulo & ICMC - Institute of Mathematics and Computer Science, Brazil); Stephan Reiff-Marganiec (University of Leicester, United Kingdom (Great Britain)); Aldexandre Delbem (University of Sao Paulo, Brazil)

Distributed Management System for Trust and Reward in Mobile Ad hoc Networks 42

Sonoko Goka and Hiroshi Shigeno (Keio University, Japan)

CLOSE: A Costless Service Offloading Strategy for Distributed Edge Cloud 48

Farah Slim and Fabrice M. Guillemin (Orange Labs, France); Yassine Hadjadj-Aoul (University of Rennes 1, France)

Cooperative Packet Transmission Scheduling between Multicast and Unicast Flows for Communication Efficiency in Wireless LAN 54

Yuta Nishida, Yosuke Tanigawa and Hideki Tode (Osaka Prefecture University, Japan)

WS: 3rd Workshop on Edge Computing

Coffee: Networking & Coffee Break

Tutorial 3: Tutorial #3 Low Power Wide Area Networks

Tutorial 5: Tutorial #5 Towards Programmable Mobile Networks and Network Slicing

Tutorial 6: Tutorial #6 Virtualization of IoT and Big Data Paradigm in Consumer Application

WS: 3rd Workshop on Edge Computing

Resolution Strategies for Networking the IoT at the Edge via Named Functions 60

Christopher Scherb (University of Basel, Switzerland); Dennis Grewe and Marco Wagner (Robert Bosch GmbH, Germany); Christian F Tschudin (University of Basel, Switzerland)

Edge-centric Field Monitoring System for Energy-efficient and Network-friendly Field Sensing 66

Keigo Ogawa, Kenji Kanai, Masaru Takeuchi and Jiro Katto (Waseda University, Japan); Toshitaka Tsuda (Waseda University & Formerly Fujitsu, Japan)

HeComm: end-to-end secured communication in a heterogeneous IoT environment via fog computing 72

Jori Winderickx (KU Leuven, Belgium); Dave Singelee (Katholieke Universiteit Leuven, Belgium); Nele Mentens (KU Leuven, Belgium)

FOCUS: A Fog Computing-based Security System for the Internet of Things 78

Salem Alharbi, Peter Rodriguez, Rajaputhri Maharaja, Prashant Iyer, Nivethitha Bose and Zilong Ye (California State University, Los Angeles, USA)

Live Migration on ARM-based Micro-datacentres 83

Ilias Avramidis and Michael Mackay (Liverpool John Moores University, United Kingdom (Great Britain)); Fung Po Tso (Loughborough University, United Kingdom (Great Britain))

R1: Opening Reception

GS: General Session: Opening remarks and Keynote I

Title: Network of 'Things'

Abstract: System primitives allow for formalisms, reasoning, simulations, and reliability and security risk trade-offs to be formulated and argued. In this work, five core primitives belonging to most distributed systems are presented. These primitives apply well to systems with large amounts of data, scalability concerns, heterogeneity concerns, temporal concerns, and elements of unknown pedigree with possible nefarious intent. These primitives form the basic building blocks for a Network of 'Things' (NoT) [NIST SP 800-183], including the Internet of Things (IoT). This talk discusses the underlying and foundational science of IoT and thus gives the audience a general understanding of what IoT is all about. The talk will also touch on the university curriculum education that needs to be taught to be "workplace-ready" as an IoT engineer.

Coffee: Networking & Coffee Break

SS: Special-Sessions (I): Physical Layer Advances

Artificial Noise-Aided Secure Beamforming for Multigroup Multicast 89

Wanjik Kim, Sukjong Ha and Jeongwan Koh (Korea Advanced Institute of Science and Technology, Korea); Joonhyuk Kang (KAIST, Korea)

Near Shannon Bound Performance for Low Rate Short Block Turbo Codes 93

Fatemeh Khalili and Jeffrey Dill (Ohio University, USA)

NLOS Identification in UWB channel for Indoor Positioning 97

Dae-Ho Kim and Goo-Rak Kwon (Chosun University, Korea); Jong-Woo Kim (UNIC Co., Ltd., Korea); Jae-Young Pyun (Chosun University & Dept. of Information and Communication Engineering, Korea)

Wireless Optical Ethernet Modem for Underwater Vehicles 101

Takao Sawa (Japan Agency for the Marine-Earth Science and Technology & Marine Technology Center, Japan); Naoki Nishimura (Shimadzu Corp., Japan); Shin Ito (SAS Corp., Japan)

Track 3: Track 3: Wireless Communications: MAC & Cross-Layer Design

Predictive Medium Access Control for Industrial Cognitive Radio 105

Ahmad Saad (Fraunhofer Institute ESK, Germany); Barbara Staehle (HTWG Konstanz, Germany); Rudi Knorr (Fraunhofer Institute for Embedded Systems and Communication Technologies (ESK), Germany)

***Energy-Aware Receiver-Driven Medium Access Control Protocol for Wireless Energy-Harvesting Sensor Networks* 113**

Ryo Tanabe and Tatsuhiro Kawaguchi (Advanced Wireless & Communication Research Center (AWCC), The University of Electro-Communications); Ryohei Takitoge and Koichiro Ishibashi (Graduate School of Informatics and Engineering, The University of Electro-Communications); Koji Ishibashi (Advanced Wireless & Communication Research Center (AWCC), The University of Electro-Communications)

***A Scalable Protocol Stack for IEEE 802.11s-based Advanced Metering Infrastructure Networks* 119**

Samet Tonyali and Kemal Akkaya (Florida International University, USA)

***Receiver-Initiated Dynamic Duty Cycle Scheduling Schemes for Underwater Wireless Sensor Networks* 125**

Muhammad Azfar Yaqub and Muhammad Toaha Khan (Kyungpook National University, Korea); Syed Hassan Ahmed (University of Central Florida, USA); Dongkyun Kim (Kyungpook National University, Korea)

Track 4: Track 4: Wireless Communications: Fundamentals & PHY (I)

***Asymptotic Analysis and Optimization Design of Physical Layer Systematic Rateless Codes* 131**

Amrit Kharel and Lei Cao (The University of Mississippi, USA)

***Fast Spatial Correlation Acquisition for Hybrid Precoding Using Sequential Compressive Sensing* 137**

Jinping Hao (Bell Labs China, P.R. China); Hao Liu (Bell Labs China)

***A Low Complexity and Flexible Implementation of 2^n -QAM for Software Defined Radio Applications* 143**

Hadi Alasti (IPFW, USA)

***High Impedance Holographic Metasurfaces for Conformal and High Gain Antenna Applications* 149**

Samuel Kim, David Shrekenhamer and Jeffrey Will (Johns Hopkins University/Applied Physics Laboratory, USA); Ra'id Awadallah (Johns Hopkins University, USA); Joseph Miragliotta (Johns Hopkins University/Applied Physics Laboratory, USA)

Track 5: Track 5: Mobile & Wireless Networks (I)

***Node Placement for Target Coverage and Network Connectivity in WSNs with Multiple Sinks* 153**

Nguyen Hanh (Hanoi University of Science and Technology, Vietnam); Phi Le Nguyen (The Graduate University for Advanced Studies, Japan); Phan Thanh Tuyen (Hanoi University of Science and Technology, Vietnam); Huynh Thi Thanh Binh (HUST, Vietnam); Ernest Kurniawan (Institute for Infocomm Research, Singapore); Yusheng Ji (National Institute of Informatics, Japan)

***Load Balanced and Constant Stretch Routing in the Vicinity of Holes in WSNs* 159**

Phi Le Nguyen (The Graduate University for Advanced Studies, Japan); Yusheng Ji (National Institute of Informatics, Japan); Khanh Le and Thanh-Hung Nguyen (Hanoi University of Science and Technology, Vietnam)

***Log Analysis in a HTTP Proxy Server for Accurately Estimating Web QoE* 165**

Anan Sawabe, Hiroshi Yoshida and Kousuke Nogami (NEC Corporation, Japan)

***Mitigation of Undesirable Association Behaviors of Mobile Devices With Public WiFi Networks* 172**

Sarvesh Kulkarni, Daniel Jigarjian and Vijay Gehlot (Villanova University, USA); Ivan Ong (Comcast, USA)

Track 9: Track 9: Vehicular Comm. & Applications in Water, Land and Sky

OFDM High Speed Train Systems in 5G Cellular Networks 180

Vahid Vahidi and Ebrahim Saberinia (University of Nevada, Las Vegas, USA)

Cooperative Coexistence and Resource Allocation for V2X Communications in LTE-Unlicensed 186

Qing Wei, Li Wang and Zhiyong Feng (Beijing University of Posts and Telecommunications, P.R. China); Zhi Ding (University of California at Davis, USA)

Slotted IEEE 802.11p Contention for Overhead-Free Spectrum Sensing in CR-VANETs 192

Nada Elgaml, Ahmed Khattab and Hebat-Allah Mourad (Cairo University, Egypt)

A Study of Channel Model Parameters for Aerial Base Stations at 2.4 GHz in Different Environments 198

Navuday Sharma and Maurizio Magarini (Politecnico di Milano, Italy); Laura Dossi (CNR-IEIIT, Italy); Luca Reggiani (Politecnico di Milano, Italy); Roberto Nebuloni (Ieiit - Cnr, Italy)

WIP: Work-in-Progress (I)

A Flickerless Screen-Camera Communication Using Interframe Difference 204

Junya Yamamoto and Masaki Bandai (Sophia University, Japan)

Spoofing Attack Using Bus-off Attacks against a Specific ECU of the CAN Bus 208

Kazuki Iehira and Hiroyuki Inoue (Hiroshima City University, Japan); Kenji Ishida (Hiroshima City University & Graduate School of Information Sciences, Japan)

Network-Based Detection of Mobile Malware Exhibiting Obfuscated or Silent Network Behavior 212

Lanier Watkins and Amritha Kalathummarath (Johns Hopkins University Information Security Institute, USA); William H. Robinson (Vanderbilt University, USA)

Towards a Social Virtual Reality Learning Environment in High Fidelity 216

Chiara Zizza (Grinnell College, USA); Adam Starr (Pomona College, USA); Devin Hudson (Truman State University, USA); Sai Shreya Nuguri, Prasad Calyam and Zhihai He (University of Missouri-Columbia, USA)

Who's Driving You? 220

Cherita L Corbett (Johns Hopkins University Applied Physics Lab, USA); Jimmy Alexis (Johns Hopkins University, USA); Lanier Watkins (Johns Hopkins University Information Security Institute, USA)

L2: Luncheon

SS: Special-Sessions (II): New Approaches to MAC

A Novel MAC Scheduling algorithm for TCP throughput improvement in LTE system 224

Ramesh Chandran (Samsung R&D Institute, Bangalore, India); Ravi Kumar (SAMSUNG Institute India, India)

Evaluation of RTOT algorithm: a first implementation of OBSS PD-based SR method for IEEE 802.11ax 228

Tanguy Ropitault (NIST, USA)

Adaptive Hybrid MAC Protocols for UAV-Assisted Mobile Sensor Networks 235

Xiaoyan MA (University of Toulouse, France); Rahim Kacimi (IRIT/UPS, University of Toulouse, France); Riadh Dhaou (IRIT/ENSEEIH, University of Toulouse, France)

SS: Special-Sessions (III): Future Cellular Networks

Network Recommendation Based on Route Prediction and Mobile Tower Localisation 239
Awantee Deshpande, Mihir Khandekar, Charuta Pethe and Jibi Abraham (College of Engineering, Pune, India)

A Low Complexity and Bandwidth Efficient Procedure for OFDM Data Reconstruction in DSC 5G Networks 243
Vahid Vahidi and Ebrahim Saberinia (University of Nevada, Las Vegas, USA)

CLEH - Cross Layer Enhanced Handover for IMS Sessions 247
Sandesh Srivastava (Samsung R&D Institute India - Bangalore, India); Madhan Raj Kanagarathinam (Samsung R&D Institute India Bangalore, India); Suneelkumar Diggi and Hari Krishnan Natarajan (Samsung R&D Institute India - Bangalore, India)

Track 1: Track 1: Networking Solutions for Games, Multimedia, Social Good, & P2P Apps. (I)

A Novel Encoding-Decoding Scheme using Huffman Coding for Multimedia Networks 251
Muhammad Rehan Usman and Muhammad Arslan Usman (Kumoh National Institute of Technology (KIT), Korea); Soo Young Shin (Kumoh National Institute of Technology, Korea)

The Position Cheating Attack on Inter-Vehicular Online Gaming 257
Wafa Ben Jaballah (Thales Group); Mauro Conti and Claudio E. Palazzi (University of Padua, Italy)

Canarin II: Designing a Smart e-Bike Eco-System 263
Giovanni Delnevo (Università di Bologna, Italy); Silvia Mirri and Paola Salomoni (University of Bologna, Italy); Davide Aguiari, Lorenzo Monti and Vittorio Ghini (Università di Bologna, Italy); Giovanni Pau (UPMC Sorbonne Universités & UCLA, France); Sio Kei Im and Rita Tse (Macao Polytechnic Institute, Macao); Mongkol Ekpanyapong (Asian Institute of Technology, Thailand); Roberto Battistini (Università di Bologna, Italy)

Using Image Steganography for Providing Enhanced Medical Data security 269
Muhammad Arslan Usman and Muhammad Rehan Usman (Kumoh National Institute of Technology (KIT), Korea)

Track 2: Track 2: Cloud Services & Networking

Dynamic Adaptation to Environmental Changes of Optical Virtual Networking and Cloud Computing Systems for Tightly Coupling Big Data and Peripheral Computer Resources 273
Hirotaka Nakano, Yosuke Tanigawa and Hideki Tode (Osaka Prefecture University, Japan)

GSS-VC: A Game-theoretic Approach for Service Selection in Vehicular Cloud 281
Bouziane Brik (ICD/ERA (UMR CNRS 6281), Troyes University of Technology, France); Junaid A Khan (INRIA & INSA Lyon, France); Yacine Ghamri-Doudane (University of la Rochelle, France); Nasreddine Lagraa (Amar Thelidji University, Laghouat & LIM Laboratory, Algeria); Abderrahmane Lakas (UAE University, United Arab Emirates)

Latency-aware Joint Virtual Machine and Policy Consolidation for Mobile Edge Computing 287
Thiago Augusto Lopes Genez (University of Bern, Switzerland); Fung Po Tso (Loughborough University, United Kingdom (Great Britain)); Lin Cui (Jinan University, P.R. China)

A Multi-objective Non-dominated Sorting Genetic Algorithm for VNF Chains Placement 293
Selma Khebbache (Télécom SudParis, Institut Mines-Télécom, France); Makhlof Hadji (IRT System X, France); Djamel Zeghlache (Institut Mines-Telecom, Telecom SudParis & UMR 5157 CNRS - Samovar, France)

Track 4: Track 4: Wireless Communications: Fundamentals & PHY (II)

A Carrier frequency offset compensation Algorithm with Synchronization for Digital Communication Receivers 297

Sujit Jos (Samsung Advanced Institute of Technology India Labs & Samsung R&D Institute Bangalore, India); Kiran Bynam (Samsung, India); Jinesh P Nair (Nokia Networks, India); Chandrashekhar Thejaswi Pataguppe Suryanarayan Bhat (Samsung R&D Institute India, Bangalore, India); Chang Soon Park (SAIT, Korea); Young-Jun Hong (Samsung Electronics & Samsung Advanced Institute of Technology, Korea); Youngsoo Kim (Samsung Electronics, Korea)

Securing OFDM-Based Wireless Links Using Temporal Artificial-Noise Injection 301

Mohamed Marzban and Ahmed El Shafie (University of Texas at Dallas, USA); Rakan Chabaan (Hyundai, USA); Naofal Al-Dhahir (University of Texas at Dallas, USA)

Chaos MIMO-based Downlink Non-orthogonal Multiple Access Scheme With Physical Layer Security 307

Naoto Horiike, Hiroki Kitagawa and Eiji Okamoto (Nagoya Institute of Technology, Japan); Tetsuya Yamamoto (Panasonic Corporation, Japan)

Visible Light Communications: Toward Multi-Service Waveforms 314

Ahmed Hussein (State University of New York at Albany, USA); Hany Elgala (University at Albany, SUNY & NSF Lighting Enabled Systems and Applications ERC, USA); Thomas DC Little (Boston University & NSF Smart Lighting ERC, USA)

Track 5: Track 5: Mobile & Wireless Networks (II)

CPRI over Ethernet: Towards fronthaul/backhaul multiplexing 320

Mahmoud Bahnasy (École de Technologie Supérieure (ÉTS) & Université du Québec à Montréal (UQAM), Canada); Halima Elbiaze (University of Quebec at Montreal, Canada); Catherine Truchan (Ericsson, Canada)

On the scalability of 5G Core network: the AMF case 327

Imad Alawe (IRISA & IRT bcom, France); Yassine Hadjadj-Aoul (University of Rennes 1, France); Adlen Ksentini (Eurecom, France); Philippe Bertin (Orange Labs & Bcom, France); Davy Darche (TDF, France)

Multimedia Streaming using D2D in 5G Ultra Dense Networks 333

Ubaid Abbasi (Universite du Quebec a Montreal, Canada); Halima Elbiaze (University of Quebec at Montreal, Canada)

Enhanced Transmission Algorithm for Dynamic Device-to-Device Direct Discovery 339

Aziza Ben Mosbah (NIST & Télécom SudParis, USA); David Griffith (NIST, USA); Richard Rouil (National Institute of Standards and Technology, USA)

Coffee: Networking & Coffee Break

SS: Special-Sessions (IV): Network Architecture Evolution

Distributed Search for Ordered VNFs Configuring Service Chaining Based on In-network Guidance 347

Yutaro Oda, Yosuke Tanigawa and Hideki Tode (Osaka Prefecture University, Japan)

Protocol for Reduction in Network Resource Wastage for 4G Dual SIM Dual Standby User Equipment 351

Tushar Vrind (Samsung, India); Lalit Pathak (Samsung Electronics, India); Diwakar Sharma (Samsung Semiconductor India Research, India); Debabrata Das (International Institute of Information Technology - Bangalore, India)

SS (V): Special-Sessions (V): Advanced, Network- based Applications

***Development of certificate based secure communication for Mobility and Connectivity protocol* 355**

Yuya Miyazaki and Katsuhiro Naito (Aichi Institute of Technology, Japan); Hidekazu Suzuki and Akira Watanabe (Meijo University, Japan)

***Trajectory Based Pre-Key Exchange Scheme for Seamless Vehicular Networks Connectivity* 359**

Kiho Lim and Kastuv Tuladhar (University of South Dakota, USA)

***Experimental Evaluation of Fault-Tolerant Mechanisms over Imote2 Platform* 364**

Mohamed Nacer Bouatit (CNAM, France); Selma Boumerdassi (Conservatoire National des Arts et Métiers, France); Djama Adel (ESI, Algeria)

Track 1: Track 1: Networking Solutions for Games, Multimedia, Social Good, & P2P Apps. (II)

***Experimental Study of Low-Latency HD VoD Streaming using Flexible Dual TCP-UDP Streaming Protocol* 368**

Kevin Gatimu, Arul Dhamodaran, Taylor Johnson and Ben Lee (Oregon State University, USA)

***Optimizing Energy Consumption and User Experience in a Mobile Video Streaming Scenario* 374**

Thomas Breitbach (Technische Hochschule Mittelhessen, Germany); Peter Sanders (Karlsruhe Institute of Technology, Germany); Dominik Schultes (Technische Hochschule Mittelhessen, Germany)

***An Intrusion Oriented Heuristic for Efficient Resource Management in End-to-End Wireless Video Surveillance Systems* 383**

Muhammad Arslan Usman and Muhammad Rehan Usman (Kumoh National Institute of Technology (KIT), Korea); Soo Young Shin (Kumoh National Institute of Technology, Korea)

***Towards Reduced Latency in Adaptive Live Streaming* 389**

Yongtao Shuai (Saarland University, Germany); Thorsten Herfet (Saarland University & Intel Visual Computing Institute, Germany)

Track 2: Track 2: Cloud Services & Networking

***An NFV and Microservices Based Architecture for On-the-Fly Component Provisioning in Content Delivery Networks* 393**

Narjes Tahghigh Jahromi and Roch Glitho (Concordia University, Canada); Adel Larabi and Richard Brunner (Ericsson, Canada)

***ADS: Adaptive and Dynamic Scaling Mechanism for Multimedia Conferencing Services in the Cloud* 400**

Abbas Soltanian and Diala Naboulsi (Concordia University, Canada); Mohammad Ali Salahuddin (University of Waterloo, Canada); Roch Glitho (Concordia University, Canada); Halima Elbiaze (University of Quebec at Montreal, Canada); Constant Wette Tchouati (Ericsson, Canada)

***Performance Evaluations of Multimedia Service Function Chaining in Edge Clouds* 406**

Kentaro Imagane, Kenji Kanai and Jiro Katto (Waseda University, Japan); Toshitaka Tsuda (Waseda University & Formerly Fujitsu, Japan); Hidenori Nakazato (Waseda University, Japan)

Track 4: Track 4: Wireless Communications: Fundamentals & PHY (III)

***Energy Efficiency Enhancement on Cloud and Edge Processing by Dynamic RRH Selection* 410**

Jinyeop Na, Jeongwan Koh and Sangwoo Park (Korea Advanced Institute of Science and Technology, Korea); Joonhyuk Kang (KAIST, Korea)

Evaluation of LoRa Receiver Performance under Co-technology Interference 416
Guibing Zhu, Chun-Hao Liao, Makoto Suzuki, Yoshiaki Narusue and Hiroyuki Morikawa (The University of Tokyo, Japan)

Leveraging Edge Caching in NOMA Systems with QoS Requirements 423
Jose Armando Oviedo and Hamid Sadjadpour (University of California, Santa Cruz, USA)

Track 5: Track 5: Mobile & Wireless Networks (III)

Supervised Cognitive System: A New Vision for Cognitive Engine Design in Wireless Networks 428
Ismail AlQerm and Basem Shihada (KAUST, Saudi Arabia)

An Efficient Cost-Calculation Method for End-to-End Slice Generation 436
Yuki Katsumata (NTT DOCOMO, INC., Japan); Takuya Shimojo and Ashiq Khan (NTT DOCOMO, INC, Japan); Akira Yamada (NTT DOCOMO, INC., Japan); Shigeru Iwashina (NTT DOCOMO, INC, Japan)

D-TCP: Dynamic TCP Congestion Control Algorithm for Next Generation Mobile Networks 442
Madhan Raj Kanagarathinam (Samsung R&D Institute India Bangalore, India); Sukhdeep Singh (Samsung R&D India - Bangalore, India); Sandeep Irlanki (Samsung R&D Institute & Samsung, India); Abhishek Roy (Samsung Electronics, Korea); Navrati Saxena (Sungkyunkwan University & School of Information and Communication Eng., Korea)

A Network Slicing Prototype for a Flexible Cloud Radio Access Network 448
Salvatore Costanzo (LIP6 - University of Paris 6, France); Ilhem Fajjari (Orange labs, France); Nadjib Aitsaadi (ESIEE Paris & Laboratory of Computer Science Gaspard-Monge - LIGM / CNRS (UMR 8049), France); Rami Langar (University Paris Est Marne-la-Vallée, France)

Coffee: Networking & Coffee Break

Panel I: Panel I Fog Computing and Networking - What's Next?

Posters: Happy Hour and Posters

ANTs: Application-Driven Network Trust Zones on MAC-Layer in Smart Buildings 452
Arne Wall and Hannes Raddatz (University of Rostock, Germany); Michael Rethfeldt (University of Rostock & Institute of Applied Microelectronics and Computer Engineering, Germany); Peter Danielis and Dirk Timmermann (University of Rostock, Germany)

A Sectorized Directional MAC Proposal for Mitigating Deafness and Energy Consumption in Mobile Ad Hoc Networks 454
Vincenzo Inzillo (Università Della Calabria, Italy); Floriano De Rango (University of Calabria, Italy); Alfonso Ariza Quintana (University of Malaga, Spain)

A Mechanism for Congestion Control based on Traffic Measurement with OpenFlow in Disaster 456
Yuki Kobayashi (Keio University, Japan); Jun Nishiyama (Graduate School of Science and Technology Keio University, Japan); Hiroshi Shigeno (Keio University, Japan)

Dynamic Power Saving Techniques for Mobile Hotspot 458
Raj Saranappa (Samsung R&D Institute India - Bangalore Pvt. Ltd & Samsung R&D Institute India, India); Debabrata Das (International Institute of Information Technology - Bangalore, India); Vimal Bastin Edwin Joseph (Samsung R & D Institute India - Bangalore, India)

Perils of using CQIC in LTE network and A quick fix with Delayed ACK 460
Zhenzhe Zhong and Isabelle Hamchaoui (Orange Labs, France); Rida Khatoun (Telecom ParisTech, France)

Adaptive Spray: An Efficient Restricted Epidemic Routing Scheme for Delay Tolerant Networks 462
Duy Tai Nguyen (Ho Chi Minh University of Technology, Vietnam); Quang Tran Minh (Hochiminh

City University of Technology, Vietnam); Pham Tran Vu (Ho Chi Minh City University of Technology, Vietnam); Yusheng Ji and Shigeki Yamada (National Institute of Informatics, Japan)

***Efficient P2P Storage Scheme with Privacy Protection* 464**

Sanghun Choi, Hiromu Asahina and Iwao Sasase (Keio University, Japan)

***HTTP/2 Performance Evaluation with Latency and Packet Losses* 466**

Naoki Oda and Saneyasu Yamaguchi (Kogakuin University, Japan)

***Evolution of Functional Core in Network-related Function Calls during the Linux Kernel Development* 468**

Shin'ichi Arakawa, Hirotaka Miyakawa, Tetsuya Takine and Masayuki Murata (Osaka University, Japan)

***A Smart Middleware to Perform Semantic Discovery and Trust Evaluation for the Internet of Things* 473**

Jean Caminha (Federal University of Mato Grosso & Federal University of Campina Grande, Brazil); Angelo Perkusich (Federal University of Campina Grande, Brazil); Mirko Perkusich (UFCG, Brazil)

***Enhanced Multi-RAT Support for 5G* 475**

Arjun Nanjundappa (Samsung R&D India, Bangalore, India); Sukhdeep Singh (Samsung R&D India - Bangalore, India); Gaurav Jain (Samsung R&D India, Bangalore, India)

***Recurrent Neural Network-Based Received Signal Strength Estimation Using Depth Images for mmWave Communications* 477**

Hironao Okamoto, Takayuki Nishio, Masahiro Morikura and Koji Yamamoto (Kyoto University, Japan)

***Assessing the Benefit of ALTO-Guidance for P2P Live-Streaming User Experience in heterogeneous Environments* 479**

Jan Seedorf (HFT Stuttgart, Germany); Saverio Niccolini (NEC Europe Ltd., Germany); Rolf Winter (University of Applied Sciences Augsburg, Germany); Martin Stiernerling (University of Applied Sciences Darmstadt & NEC Europe Ltd., Germany); Ettore Ferranti (ABB Corporate Research, Switzerland)

Plenary: Plenary Session: Keynote II

Coffee: Networking & Coffee Break

Track 10: Track 10: Emerging Topics in Consumer Comm. & Networking (I)

***Dynamic resource control method based on real world representation with potential field* 481**

Koudai Kanda (Osaka University & Graduate School of Information Science and Technology, Japan); Shin'ichi Arakawa (Osaka University, Japan); Satoshi Imai and Toru Katagiri (Fujitsu Laboratories Ltd., Japan); Motoyoshi Sekiya (Fujitsu Laboratories Limited, Japan); Masayuki Murata (Osaka University, Japan)

***The Impact of Net Neutrality on Revenue and Quality of Service in Wireless Networks* 487**

Elissar Khloussy (Norwegian University of Science and Technology, Norway); Yuming Jiang (Norwegian University of Science and Technology (NTNU), Norway)

***A Hop-by-hop Window-based Congestion Control Method for Named Data Networking* 493**

Takahiko Kato and Masaki Bandai (Sophia University, Japan)

***Thermal aware scheduling on distributed computing water heaters* 500**

Issam Rais (Inria, France); Eddy Caron (ENS-Lyon, France); Laurent Lefevre (INRIA, France)

Track 5: Track 5: Mobile & Wireless Networks (IV)

Behavior-aware UAV-assisted Crowd Sensing Technique for Urban Vehicular Environments 504
Ezedin Barka (UAE University, United Arab Emirates); Chaker abdelaziz Kerrache (University of Ghardaia, Algeria); Nasreddine Lagraa (Amar Thelidji University, Laghouat & LIM Laboratory, Algeria); Abderrahmane Lakas (UAE University, United Arab Emirates)

A Generic Cyber Defense Scheme Based on Stackelberg Game for Vehicular Network 511
Hichem Sedjelmaci (IRT System X, France); Imane Horiya Brahmi (University College Dublin, Ireland); Aymen Boudguiga (CEA, France); Witold Klaudel (Renault, France)

A multi-radio, multi-hop ad-hoc radio communication network for Communications-Based Train Control (CBTC): Introducing frequency separation for train-to-trackside communication 517
Jahanzeb Farooq (Siemens A/S & Technical University of Denmark, Denmark); Lars Bro (Nyantec UG, Denmark); Rasmus Thystrup Karstensen (Siemens A/S, Denmark); Jose Soler (Technical University of Denmark, Denmark)

E-Darwin2: A Smartphone Based Disaster Recovery Network using WiFi Tethering 524
Amitangshu Pal and Krishna Kant (Temple University, USA)

Track 6: Track 6: Sensing, Smart Spaces & IoT: Applications and QoE (I)

AMELIA: An Application of the Internet of Things for Aviation Safety 529
Jeremiah Pate and Tosiron Adegbiya (University of Arizona, USA)

MR-IoT: an information centric MapReduce framework for IoT 535
Qian Wang (Software Research Institute, Athlone Institute of Technology, Ireland); Brian Lee, Niall Murray and Yuansong Qiao (Athlone Institute of Technology, Ireland)

Robots as-a-Service in Cloud Computing: Search and Rescue in Large-scale Disasters Case Study 541
Carla Mouradian (Concordia University, Canada); Sami Yangui (CNRS LAAS, France); Roch Glitho (Concordia University, Canada)

System design for predictive road-traffic information delivery using edge-cloud computing 548
Ryoichi Shinkuma, Shingo Kato and Masahiro Kanbayashi (Kyoto University, Japan); Yasuhiro Ikeda and Ryoichi Kawahara (NTT, Japan); Takanori Hayashi (Hiroshima Institute of Technology, Japan)

Toward Privacy Preserving in IoT E-health Systems: A Key Escrow Identity-based Encryption Scheme 554
Rihab Boussada and Mohamed Elhoucine Elhdhili (ENSI, Tunisia); Leila Azouz Saidane (ENSI, University of Manouba, Tunisia)

Track 7: Track 7: Security, Privacy & Content Protection (I)

Cryptosystems with a Multi Prime Composite Modulus 561
Nir Drucker (The University of Haifa, Israel & Amazon Web Services, USA); Shay Gueron (University of Haifa, Israel)

A Secure and Cloud-based Medical Records Access Scheme for on-Road Emergencies 568
Khaled Rabieh (Sam Houston State University, USA); Kemal Akkaya (Florida International University, USA); Umit Karabiyik and Jennifer Qamruddin (Sam Houston State University, USA)

WIP: Work-in-Progress (II)

Wireless Controller Placement Problem 576
Amit Dvir (Ariel University, Israel); Yoram Haddad (Jerusalem College of Technology, Israel); Aviram Zilberman (Ariel University, Israel)

***CupCarbon: A New Platform for the Design, Simulation and 2D/3D Visualization of Radio Propagation and Interferences in IoT Networks* 580**

Ahcene Bounceur (Lab-STICC, UBO, France); Laurent Clavier (Institut Mines-Telecom, Telecom Lille & IEMN / IRCICA, France); Pierre Combeau (XLIM University of Poitiers, France); Olivier Marc (Virtualys, France); Rodolphe Vauzelle (XLIM, France); Arnaud Masserann and Julien Soler (Virtualys, France); Reinhardt Euler (Lab-STICC UBO, France); Taha Alwajeeh (XLIM University of Poitiers, France); Vyas Devendra (Xlim, France); Umber Noreen (Lab-STICC Université de Bretagne Occidentale, France); Emilie Soret (IRCICA, France); Massinissa Lounis (University of Bejaia, France)

***Predicting Wireless Coverage Maps Using Radial Basis Networks* 584**

Yisroel Mirsky (Ben Gurion University, Beer Sheva, Israel); Yoram Haddad, Orit Rozenblit and Rina Azoulay (Jerusalem College of Technology, Israel)

***OSDF: A Framework For Software Defined Network Programming* 588**

Douglas Comer and Adib Rastegarnia (Purdue University, USA)

***Software Defined Cognitive Networking: Supporting Intelligent Online Video Streaming* 592**

Mu Mu (The University of Northampton, United Kingdom (Great Britain))

L3: Luncheon

Plenary: Plenary Session: Keynote III

Coffee Posters: Coffee Break and Demonstrations/Posters

***What Can Data Analysis Recommend on Design of Wearable Sensors?* 596**

Igor Khokhlov, Leon Reznik and Suresh Jothilingam (Rochester Institute of Technology, USA)

***DoTRo: A New Dominating Tree Routing Algorithm for Efficient and Fault-Tolerant Leader Election in WSNs and IoT Networks* 598**

Ahcene Bounceur (Lab-STICC, UBO, France); Madani Bezoui (University of Boumerdes, Algeria); Massinissa Lounis (University of Bejaia, France); Reinhardt Euler (Lab-STICC UBO, France); Ciprian Teodorov (ENSTA Bretagne, France)

***Eavesdropping Prevention for Heterogeneous Internet of Things Systems* 600**

Chen-Hung Liao, Hong-Han Shuai and Li-Chun Wang (National Chiao Tung University, Taiwan)

***Inter Ecosystem Compatibility for the Internet of Things Using a Web Browser* 602**

Kapil Kumar (Samsung R&D Institute India - Bangalore, India); Joy Bose (Samsung R&D Institute India, Bangalore, India)

***Proposal of Virtual Musical Instrument Using Single Camera and Verification of Playability* 604**

Junnosuke Tanaka (Osaka Prefecture University, Japan); Ryo Katsuma (Osaka Prefectural University, Japan)

***Combination of a Wireless Sensor Network and Drone Using Infrared Thermometers for Smart Agriculture* 606**

Tomoya Moribe, Hiraku Okada, Kentaro Kobayashi and Masaaki Katayama (Nagoya University, Japan)

***3D Radio Signal Visualization Employing Drone* 608**

Ryota Hagiwara, Hikari Inata, Yukihiro Okochi and Jiang Liu (Waseda University, Japan); Shigeru Shimamoto (Waseda University & Graduate School of Global Information and Telecommunication Studies, Japan)

***Practical Green Information Delivery Protocol for Sensor-to-Vehicle Communications* 610**

Yuki Goto and Koji Ishibashi (The University of Electro-Communications, Japan)

***Mobility-controlled Flying Routers for Information-centric Networking* 612**

Taku Kitagawa (Osaka University, Japan); Shingo Ata (Osaka City University, Japan); Suyong Eum (OSAKA University, Japan); Masayuki Murata (Osaka University, Japan)

Data gathering algorithm for children's observation system 614

Mikiko Sode Tanaka (Kanazawa technical collage, Japan)

An Efficient Alternative to Personalized Page Rank For Friend Recommendations 616

Felix Zhan, Brandon Waters, Maria Mijangos, LeAnn Chung, Raghav Bhagat, Tanvi Bhagat, Matin Pirouz, Carter Chiu, Shahab Tayeb, Elliott Ploutz and Justin Zhan (University of Nevada, Las Vegas, USA); Laxmi Gewali (University of Nevada Las Vegas, USA)

Prediction of Online Social Networks Users' Behaviors with a Game Theoretic Approach 618

Felix Zhan, Gabriella Laines, Sarah Deniz, Sahan Paliskara, Irvin Ochoa, Idania Guerra, Shahab Tayeb, Carter Chiu, Matin Pirouz, Elliott Ploutz and Justin Zhan (University of Nevada, Las Vegas, USA); Laxmi Gewali (University of Nevada Las Vegas, USA); Paul Oh (University of Nevada, Las Vegas, USA)

An Innovative Security Architecture for Low Cost Low Power IoT Devices Based on Secure Elements 620

Pascal Urien (Télécom ParisTech, France)

Prototype implementation of BLE based automated data collection scheme in agricultural measurement system 622

Katsuyuki Tanaka, Mizuki Murase and Katsuhiro Naito (Aichi Institute of Technology, Japan)

CupCarbon-Lab: An IoT Emulator 624

Ahcene Bounceur (Lab-STICC, UBO, France); Olivier Marc (Virtualys, France); Massinissa Lounis (University of Bejaia, France); Julien Soler (Virtualys, France); Laurent Clavier (Institut Mines-Telecom, Telecom Lille & IEMN / IRCICA, France); Pierre Combeau (XLIM University of Poitiers, France); Rodolphe Vauzelle (XLIM, France); Loic Lagadec (ENSTA-Bretagne & LABSTICC - UMR 6285, France); Reinhardt Euler (Lab-STICC UBO, France); Madani Bezoui (University of Boumerdes, Algeria); Pietro Manzoni (Universitat Politècnica de València, Spain)

Prototype implementation of human management system with BLE beacon devices in natural disasters 626

Mizuki Murase, Katsuyuki Tanaka and Katsuhiro Naito (Aichi Institute of Technology, Japan)

When Smart Comes to Town: A Mobile Platform for Smart District Services 628

Gianluca A. Rizzo (HES SO Valais, Switzerland); Yann Bocchi (HES-SO Valais - Wallis, Switzerland); Zhan Liu (University of Applied Science and arts Western Switzerland & HES-SO Valais-Wallis, Switzerland); Maria Sokhn (University of Applied Sciences of Western Switzerland - Sierre, Switzerland); Antonio J. Jara (HES-SO, Switzerland)

Demonstration of Augmented-Reality Optical Narrowcasting 630

Narkis Shatz (SureFire LLC, USA); John Bortz (United States & SureFire LLC, USA); Mark Squire (SureFire LLC, USA)

Easy Accessible Virtual Computer Room for BYOD Environment 632

Kazuhiro Mishima, Takeshi Sakurada and Yoichi Hagiwara (Tokyo University of Agriculture and Technology, Japan)

Prototype implementation of RFID based health management system with low-power ARM microcomputer 634

Toshifumi Watanabe, Mizuki Murase and Katsuhiro Naito (Aichi Institute of Technology, Japan); Nobuyuki Ito (Mitsubishi Electronic Engineering Co. Ltd., Japan); Katsuhiko Kaji, Naoya Chujo and Tadanori Mizuno (Aichi Institute of Technology, Japan)

Practical deployment of network coding for real-time applications in 5G networks 636

Frank Gabriel, Giang T. Nguyen, Robert-Steve Schmoll and Juan A. Cabrera (Technische Universität Dresden, Germany); Maciej Mühleisen (Ericsson Research, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

DEMO: SDN-based Network Slicing in C-RAN 638

Salvatore Costanzo (LIP6 - University of Paris 6, France); Ilhem Fajjari (Orange labs, France); Nadjib Aitsaadi (ESIEE Paris & Laboratory of Computer Science Gaspard-Monge - LIGM / CNRS (UMR 8049), France); Rami Langar (University Paris Est Marne-la-Vallée, France)

Implementation of Condition-Aware Receiver-Initiated MAC Protocol to Realize Energy-Harvesting Wireless Sensor Networks 640

Tatsuhiko Kawaguchi (The University of Electro-Communications & AWCC, Japan); Ryo Tanabe, Ryohei Takitoge, Koichiro Ishibashi and Koji Ishibashi (The University of Electro-Communications, Japan)

Demonstration of VR / AR offloading to Mobile Edge Cloud for low latency 5G gaming application 643

Robert-Steve Schmoll (Technische Universität Dresden, Germany); Sreekrishna Pandi (TU Dresden, Germany); Patrik János Braun (Budapest University of Technology and Economics, Hungary); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

Massive Video Multicasting in Cellular Networks using Network Coded Cooperative Communication 646

Sreekrishna Pandi (TU Dresden, Germany); Roberto Torre Arranz and Giang T. Nguyen (Technische Universität Dresden, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

Android System Security Evaluation 648

Igor Khokhlov and Leon Reznik (Rochester Institute of Technology, USA)

Reliable Low Latency Wireless Mesh Networks - From Myth to Reality 650

Sreekrishna Pandi and Simon Wunderlich (TU Dresden, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

Smart Bracelets: Towards Automating Personal Safety using Wearable Smart Jewelry 652

Jayun Patel and Ragib Hasan (University of Alabama at Birmingham, USA)

SS: Special-Sessions (VI): Traffic Management and Control

Traffic Volume Reduction in Smart Grid Networks by a Cooperative Intelligent Interpolation Technique 654

Arash Boustani and Navid Reza Alamatsaz (Wichita State University, USA); Nima Alamatsaz (New Jersey Institute of Technology); Ashkan Boustani (University of Red Crescent Society of Iran, Iran)

An Ensemble Method for Estimating TCP Throughput on Application Layer 661

Natsuki Kai, Hiroshi Yoshida and Koichi Nihei (NEC Corporation, Japan)

An Effective Flow Aggregation for SDN-Based Background and Foreground Traffic Control 665

Quang Tran Minh and An Van Le (Hochiminh City University of Technology, Vietnam); Tran Khanh Dang (Ho Chi Minh City University of Technology (HCMUT), Vietnam); Thoai Nam (Ho Chi Minh City University of Technology, Vietnam); Takeshi Kitahara (KDDI Research, Inc., Japan)

Analytics as a Service Architecture for Cloud-based CDN: Case of Video Popularity Prediction 669

Maroi Aloui (UQAM, Canada); Sami Yangui (CNRS LAAS, France); Halima Elbiaze (University of Quebec at Montreal, Canada); Roch Glitho (Concordia University, Canada)

Track 10: Track 10: Emerging Topics in Consumer Comm. & Networking (II)

Mission Planning for UAV-based Opportunistic Disaster Recovery Networks 673

Lei Zhong (National Institute of Informatics, Japan); Keno Garlichs (TU Braunschweig, Germany); Shigeki Yamada (National Institute of Informatics, Japan); Kiyoshi Takano (University of Tokyo, Japan); Yusheng Ji (National Institute of Informatics, Japan)

5G Next generation VANETs using SDN and Fog Computing Framework 679

Ammara Khan (University of Technology, Australia); Mehran Abolhasan (University of Technology Sydney, Australia); Wei Ni (CSIRO, Australia)

***Assessing the Overhead of Authentication during SDN-Enabled Restoration of Smart Grid Inter-substation Communications* 685**

Abdullah Aydeger, Nico Saputro and Kemal Akkaya (Florida International University, USA); Selcuk Uluagac (Florida International University & Electrical and Computer Engineering, USA)

***A Practical Model for Traffic Forecasting based on Big Data, Machine-learning, and Network KPIs* 691**

Luong Vy Le, Do Sinh, Li-Ping Tung and Bao-Shuh Lin (National Chiao Tung University, Taiwan)

Track 6: Track 6: Sensing, Smart Spaces and IoT: Applications and QoE (II)

***Smart Things: Conditional Random Field based solution for Context-awareness at the IoT Edge* 695**

Mariem Harmassi and Cyril Faucher (University of La Rochelle, France); Yacine Ghamri-Doudane (University of la Rochelle, France)

***A Stochastic Game for Adaptive Security in Constrained Wireless Body Area Networks* 702**

Amel Arfaoui (University of Bourgogne / Sup'Com, Tunisia); Asma Ben Letaifa (SupCom, Tunisia); Kribeche Ali (University of Burgundy, France); Sidi-Mohammed Senouci (University of Bourgogne - ISAT Nevers, France); Mohamed Hamdi (SUPCOM, Tunisia)

***Design and Implementation of Monitoring System for Breathing and Heart Rate Pattern using WiFi Signals* 709**

Sangyoun Lee and Young Deok Park (Pohang University of Science and Technology (POSTECH), Korea); Seokseong Jeon (POSTECH, Korea); Young-Joo Suh (Pohang University of Science and Technology (POSTECH), Korea)

***Towards an Efficient Energy Management to Reduce CO2 Emissions and Billing Cost in Smart Buildings* 716**

Mohamed Attia (University of Bourgogne, France); Nour Haidar (University of Burgundy, France); Sidi-Mohammed Senouci (University of Bourgogne - ISAT Nevers, France); El-Hassane Aglzim (DRIVE EA1859, Université Bourgogne Franche Compté, France)

Track 7: Track 7: Security, Privacy & Content Protection (II)

***Mitigating Forwarding Misbehaviors in RPL-based Low Power and Lossy Networks* 722**

Cong Pu and Salam Hajjar (Marshall University, USA)

***A Hybrid Artificial-Noise and Secret-Key Scheme for Securing OFDM Transmissions in V2G Networks* 728**

Ahmed El Shafie and Mohamed Marzban (University of Texas at Dallas, USA); Rakan Chabaan (Hyundai, USA); Naofal Al-Dhahir (University of Texas at Dallas, USA)

Track 8: Track 8: Mobile and Wearable Devices, Services & Applications

***A Comparative Analysis of Wearables Operating Systems Based on Functional Constraints* 734**

Vicente J. P. Amorim (UFOP, Brazil); Saul Delabrida (Universidade Federal de Ouro Preto, Brazil); Ricardo Augusto Rabelo Oliveira (UFOP/DECOM, Brazil)

***MULTI-WEAR: A Multi-Wearable Platform For Enhancing Mobile Experiences* 740**

Andreas Pamboris (University of Central Lancashire & University of Cyprus, Cyprus); Panayiotis Andreou (University of Central Lancashire, Cyprus); Herodotos Herodotou (Cyprus University of Technology, Cyprus); George Samaras (University of Cyprus, Cyprus)

***Session Cloning Protocol between Smart Devices for connected and un-connected states in B4G and 5G* 746**

Tushar Vrind (Samsung, India); Lalit Pathak (Samsung Electronics, India); Diwakar Sharma (Samsung Semiconductor India Research, India); Debabrata Das (International Institute of Information Technology - Bangalore, India)

Coffee: Networking & Coffee Break

Panel II: Panel II "Immersive Future" with New and Emerging Innovations and Predictions

Banquet: Banquet and Awards Ceremony (Jazz Band)

Tutorial 7: Tutorial #7 Classification, Solutions, and Challenges of Denial of Service Attacks on the Smart Grid

Tutorial 8: Tutorial #8 A First-Principles Approach to Computer Networking

Tutorial 9: Tutorial #9 Scalable Approaches to Network Protocol and Architectures Design in New Generation Wireless Systems:

WS: 3rd Workshop on Accessible Devices and Services

How to motivate participation and improve quality of crowdsourcing when building accessibility maps 754

Zhan Liu (University of Applied Science and arts Western Switzerland & HES-SO Valais-Wallis, Switzerland); Shaban Shabani (HES-SO Valais-Wallis, Switzerland); Nicole Glassey Balet (HESSO, Switzerland); Maria Sokhn (University of Applied Sciences of Western Switzerland - Sierre, Switzerland); Fabian Cretton (University of Applied Sciences of Western Switzerland, Sierre, Switzerland)

On augmenting the experience of people with mobility impairments while exploring the city: A case study with wearable devices 760

Catia Prandi (Madeira Interactive Technologies Institute & ARDITI, Portugal); Giovanni Delnevo (Università di Bologna, Italy); Chiara Ceccarini (University Of Bologna, Italy)

StepByWatch: A Smartwatch-based Enhanced Navigation System for Visually Impaired Users 765

Armir Bujari (University of Padua, Italy); Matteo Ciman (University of Geneva & Quality of Life Group, Switzerland); Ombretta Gaggi and Claudio E. Palazzi (University of Padua, Italy)

AlmaWhere: a Prototype of Accessible Indoor Wayfinding and Navigation System 770

Giovanni Delnevo and Lorenzo Monti (Università di Bologna, Italy); Francesco Vignola, Paola Salomoni and Silvia Mirri (University of Bologna, Italy)

Coffee: Networking & Coffee Break

Tutorial 7: Tutorial #7 Classification, Solutions, and Challenges of Denial of Service Attacks on the Smart Grid

Tutorial 8: Tutorial #8 A First-Principles Approach to Computer Networking

WS: 3rd Workshop on Accessible Devices and Services

On Improving GlovePi: Towards a Many-to-Many Communication Among Deaf-blind Users 776

Giovanni Delnevo and Lorenzo Monti (Università di Bologna, Italy)

A Novel Obstacle Avoidance System for Guiding the Visually Impaired using Fuzzy Control Logic 781

Wafa M Elmannai (University of Bridgeport, USA); Khaled M. Elleithy (School of Engineering,

University of Bridgeport, USA)

Topic-based Playlist to Improve Video Lectures Accessibility 790

Marco Furini (University of Modena and Reggio Emilia, Italy); Silvia Mirri (University of Bologna, Italy); Manuela Montangero (University of Modena and Reggio Emilia, Italy)

On Enhancing Accessible Smart Buildings Using IoT 795

Giovanni Delnevo and Lorenzo Monti (Università di Bologna, Italy); Federico Foschini and Luca Santonastasi (University of Bologna, Italy)

evoGraphs - A jQuery Plugin to Create Web Accessible Graphs 801

Ather Sharif (EvoXLabs, USA); Babak Forouraghi (Saint Joseph's University, USA)

Combined use of Artificial Intelligence and Crowdsourcing to provide alternative content for images on websites 805

Andrea Mangiatordi (University of Milano Bicocca, Italy); Marco Lazzari (University of Bergamo, Italy)