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GENERAL CO-CHAIRS MESSAGE

Dear participants and colleagues, it is our pleasure to welcome you to SoftCOM 2018 conference. We are excited to have an opportunity to take part in the organization of an international conference that gathers researchers and professionals from academia and industry to share experiences and new ideas in such a dynamic area as Information and Communication Technology (ICT).

The face of ICT industry is changing faster than ever. We move closer to the world of 5G, and 2018 is the year of the first 5G commercial launches and large scale deployments of the cellular Internet of Things (IoT). With both evolving and new services we are enabling people to collaborate, innovate, learn, participate in ways we never thought possible. We are connecting cars, robots, shipping containers, agricultural fields, traffic systems. Through joint research and technology advancement we are opening ground for new discoveries. A collaboration of industry with scientific and academic community is a key success factor in today's highly competitive global marketplace. We can together deliver growth and prosperity, holding the potential to truly shape the future and leave a positive legacy for generations to come.

The 26th International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2018), co-sponsored by the IEEE Communications Society, will be held in the beautiful city of Split, and in a tourist oasis Supetar on the island of Brač, both located on the magnificent Croatian Adriatic coast. It will be our pleasure to meet you at the conference.

Welcome!

Dr. Sinisa Krajnovic, Ericsson AB

Prof. Dinko Begusic, University of Split - FESB

TEHNIICAL PROGRAM CHAIRS MESSAGE

The 26th Conference on Software, Telecommunications and Computer Networks (SoftCOM 2018) will be held in attractive ambience of the Bluesun Resort Velaris and Waterman Supetrus Resort, both in Supetar, island of Brac, Croatia, September 13 to 15, 2018.

Researchers and experts from industry, research institutes and universities from 38 countries all around the world have submitted in total 166 submissions for presentation at SoftCOM 2018. Submitted papers have been reviewed by more than 250 scientists from universities, institutes and ICT companies. 82 accepted papers have been carefully selected based on their contribution, relevance, conceptual clearness and overall quality. 49% of submitted papers have been recommended for presentation within the technical program.

The technical conference program features nine general conference sessions, three symposia, five special sessions. and one workshop. The symposia have been dedicated to the following topics: Green Networking and Computing, Environmental Electromagnetic Compatibility, and Information Security and Intellectual Property. The special sessions are dedicated to hot topics including: QoS in Wired and Wireless Networks, Ad Hoc&Sensor Networks and IoT, Security and Digital Forensics, Smart Environments and IoT, and Advanced Educational Technologies. The Workshop on Robotic and ICT Assisted Wellbeing has been jointly coorganized by the research groups from the universities from Greece, Bulgaria and Croatia.

In conjunction with the SoftCOM 2018 conference a professional 7th Workshop on Software Engineering in Practice has been organized by the research group from Ericsson Nikola Tesla company.

Besides that a Business Forum will be organized featuring invited talks, workshops and panel discussions with participation of managers, experts, and institutions' representatives. "Big Data Panel: Is Data the New Oil?" has been jointly organized by researchers from the University of Zagreb, University of Split and the company Ericsson Nikola Tesla.

On behalf of the Program committee we would like to thank and credit the authors for their excellent contributions. Particular thanks to the reviewers for their great job as well as to the IEEE Communications Society (ComSoc), Technical Committee of Communication Software for the support.

Program Committee Co-chairs

Nikola Rozic, Pascal Lorenz

SoftCOM 2018 COMMITTEES

TECHNICAL PROGRAM COMMITTEE

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Tianhua Xu, University of Warwick, UK

Heather Yu, Telecordia Technologies, USA

SoftCOM 2018 Conference Secretary

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UNIVERSITY OF SPLIT

FACULTY OF ELECTRICAL ENGINEERING, MECHANICAL ENGINEERING AND NAVAL ARCHITECTURE - FESB SPLIT

COMMUNICATIONS AND INFORMATION SOCIETY, CROATIA (CCIS)

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SoftCOM 2018 PROGRAM OUTLINE

Thursday, September 13, 2018

*(location: **Bluesun Resort Velaris**)*

08.30 – 16.00 Registration

09.30 - 11.00 Technical program, Professional program, Business forum

11.00 - 11.30 Coffee break

11.30 - 13.00 Technical program, Professional program, Business forum

Lunch time

14.30 - 16.00 Technical program, Professional program, Business forum

16.00 - 16.30 Coffee break

Friday, September 14, 2018

*(location: **Bluesun Resort Velaris**)*

08.30 - 11.00 Registration

09.30 - 11.00 Technical program, Professional program, Business forum

*(location: **Waterman Forum - Waterman Svpetrvs Resort**)*

11.00 - 11.30 Coffee break

11.30 - 13:00 Opening ceremony, Keynote speech

Conference Luncheon

14.30 - 17.00 Registration

14.30 - 16.00 Technical program, Professional program, Poster Session, Business forum

16.00 - 16.30 Coffee break

18.00 Ferry transfer to Port of Split

19.00 – 20.00 Guided Tour in Split

20.00 – 21.30 Welcome Party in Split

Saturday, September 15, 2018

*(location: **Bluesun Resort Velaris**)*

08.30 - 10.30 Registration

09.30 – 11.00 Technical program, Professional program, Business forum

11.00 - 11.30 Coffee break

11.30 - 13.00 Technical program, Professional program, Business forum

Lunch

14.00 – 17.30 Conference Trip

KEYNOTE SPEAKER

KEYNOTE SPEECH

Friday, September 14

11:30-13:00 (WATERMAN FORUM - WATERMAN
SVPETRVS RESORT)

Azimeh Sefidcon, PhD

*Director Research, Ericsson,
Sweden*



Industrial cloud, Distributed Edge computing for 5G

5G systems are already starting to facilitate the digital transformation of industries by providing not only faster network with higher bandwidth but also the flexibility, agility and precision required by IoT context and mission critical industrial applications. The combination of fast network, data processing along with the high level of intelligence supported by advanced machine learning algorithms are the foundation over which the future of industries will be shaped. In contexts such as smart manufacturing and transportation, porting the data, from sensors and industrial application to edge of the network, and performing machine learning and required analysis close to where the data has been generated is essential for speed, data protection, flexibility and performance. The

algorithms for smart processing as well as hosting the applications at edge of the network requires computing to be present at the edge. Edge computing pressed for scalability and flexibility that can be provided by cloud technologies, calls for edge cloud to be an integrated part of the 5G network. At Ericsson research we have worked on Industrial cloud which is in essence a distributed Edge cloud that could be an integral part of 5G networks. In this talk, industrial cloud, its different key aspects, data management, orchestration, edge integration, automation and network functions will be presented.

Azimeh Sefidcon

Azimeh Sefidcon holds a PhD in electrical and computer engineering with focus on IP mobility, a master degree in Intelligent networks and a master degree in computer hardware. She started her career in automation of industries by designing software and hardware components necessary for specific industry automation. Later she continued her academic education with focus on telecommunication and combined the knowledge of software and hardware optimization and industry automation in telecom domain. Joining Ericsson in 2003, she held various technical and leadership positions focusing in radio and core networks. She is currently the research director and head of Cloud system and platforms research at Ericsson where she spends her time on building the future technologies for 5G, IoT and industrial cloud among other things.

TECHNICAL PROGRAM: GENERAL CONFERENCE

Thursday, September 13, 09:30 - 11:00 (ŠOLTA)

S1/I: WIRELESS COMMUNICATIONS I

Chair: Maja Škiljo (University of Split, Croatia)

User-centric JT-CoMP for High Altitude Platforms

Muhammad D Zakaria (University of York, United Kingdom (Great Britain) & Universiti Sultan Zainal Abidin, Malaysia); David Grace, Paul D Mitchell and Tareq M. Shami (University of York, United Kingdom (Great Britain))

Mitigation of Nonlinear Amplifier Distortion for CP-OFDM Based Cognitive Radio Systems

Lajnef Hanen (Sup'Com, Tunisia); Maha Cherif (Innov'Com Lab, Tunisia); Moez Hizem and Ridha Bouallegue (Sup'Com, Tunisia)

BER Based OFDM PAPR Estimation

Adriana Lipovac and Ante Mihaljević (University of Dubrovnik, Croatia)

Optimizing Communication Costs based on the Evolved Variational Message Passing Algorithm using an Enhanced Version of Junction Tree in Wireless Networks
Kaouther Hedhly and Mohamed Laaraiedh (Higher School of Communications of Tunis, University of Carthage, Tunisia); Fatma Abdelkefi (High School of Communications of Tunis (SUPCOM), Tunisia); Mohamed Siala (Sup'Com, Tunisia)

Thursday, September 13, 11:30 - 13:00 (ŠOLTA)

S1/II: WIRELESS COMMUNICATIONS II

Chair: Zoran Blažević (University of Split, Croatia)

Case Study of Spatial Channel Model for Vehicle to Vehicle Communication in Roadside Scattering Environment

Hanene Zormati (Eniso, Tunisia); Jalel Chebil (University of Sousse, Tunisia); Jamel Bel Hadj Tahar (National Engineers School Of Sousse, Tunisia)

Car to X Communication with Optical Wireless as Support and Alternative to RF-Technologies for Roads and Future Transportation

Pasha Bekhrad, Hristo Ivanov and Erich Leitgeb (Graz University of Technology, Austria)

Statistics of the Product of Three Nakagami-m Random Variables with Applications

Dragana Krstić (Faculty of Electronic Engineering, University of Niš, Serbia); Mihajlo Stefanović (University of Nis, Serbia); Petar Nikolić (Tigar Tyres, Piroć, Serbia); Sinisa Minić (Teachers College in Prizren - Leposavic, Serbia)

Thursday, September 13, 14:30 - 16:00 (ŠOLTA)

S2: 5G TECHNOLOGIES

Chair: Joško Radić (University of Split, Croatia)

Fast Transport for Edge Computing in 5G Networks

Åke Arvidsson (Kristianstad University, Sweden); Lars Westberg (Royal Institute of Technology, Sweden)

Enhanced Extended Access Barring Mechanism for Massive Machine-Type Communications in 5G Context
Sirine Ben Alaya (Higher School of Communication of Tunis & MEDIATRON-University of Carthage, Tunisia); Med Taher Missaoui and Mounir Frikha (SupCom, Tunisia)

Singular Value Thresholding based Adaptive Approach for Hybrid Beamforming in MmWave Massive MIMO-OFDM Transmitters

Ameni Mejri (National Engineering School of Tunis & SYS'COM Laboratory, Tunisia); Moufida Hajjaj (SUP'COM, Tunisia); Salem Hasnaoui (National School of Engineering of Tunis, Tunisia); Ridha Bouallegue (Innov'COM @ Sup'Com., Tunisia)

Iterative SDR-based Hybrid Precoding Algorithm for mmWave massive MIMO Systems

Moufida Hajjaj (SUP'COM, Tunisia); Ameni Mejri (National Engineering School of Tunis & SYS'COM Laboratory, Tunisia); Ridha Bouallegue (Innov'COM @ Sup'Com., Tunisia); Salem Hasnaoui (National School of Engineering of Tunis, Tunisia)

Application of Two-Constant Feedback Quasi-Orthogonal Space Time Block Coding in MIMO Communication Systems

Abdulghani M Elazreg (University of Derby & UK, United Kingdom (Great Britain)); Ramadan Elsabee (Loughborough University, United Kingdom (Great Britain)); Mohamed Shrud (Tripoli Institute of Electronic Technology, Libya); Ahmad Kharaz (University of Derby, United Kingdom (Great Britain))

Outage Probability of Direct and Relay Assisted Transmission in NOMA Systems with Energy Harvesting

Nouha Dahi (National Engineering School Of Tunis, Tunisia); Nouredine Hamdi (SYSCOM ENIT, Tunisia)

Friday, September 14, 09:30 - 11:00 (VIS)

S3: OPTICAL COMMUNICATIONS

Chair: Julije Ožegović (University of Split, Croatia)

Considering of PAM-4, DB, NRZ and RZ for Implementation in Next-Generation PONs

Sandis Spolitis, Inna Kurbatska and Vjaceslavs Bobrovs (Riga Technical University, Latvia)

Optimization of the Optical Power Budget for Various WDM-PON Network Designs with Traffic Protection Securing

Rastislav Róka (Slovak University of Technology, Slovakia)

Development of a Three Dimensional Multi-Service/Multi-Diagonal Code for OCDMA System

Nabiha Jellali (Syscom- ENIT, Tunisia); Moez Ferchichi (Ecole Nationale d'Ingénieurs de Tunis, Tunisia); Monia Najjar Bounouh (Syscom, Tunisia)

Thursday, September 13, 11:30 - 13:00 (LASTOVO)

S4: NETWORK DESIGN AND MANAGEMENT

Chair: Julije Ožegović (University of Split, Croatia)

Designing a Private CDN with an off-sourced Network Infrastructure: Model and Case Study

Claudia Canali, Andrea Corbelli and Riccardo Lancellotti (University of Modena and Reggio Emilia, Italy)

NEMO: A Flexible Java-based Network Emulator
Luca Davoli, Yanina Protskaya and Luca Veltri (University of Parma, Italy)

KISS Methodologies for Network Management and Anomaly Detection

Carlos Vega and Javier Aracil (Universidad Autonoma de Madrid, Spain); Eduardo Magaña (Universidad Publica de Navarra, Spain)

Message Format and Field Semantics Inference for Binary Protocols Using Recorded Network Traffic

Gergő Ládi, Levente Buttyán and Tamás Holczer (Budapest University of Technology and Economics, Hungary)

Sequential Randomization load balancing for Fog Computing

Roberto Beraldi (Sapienza Università di Roma, Italy); Hussein Alnuweiri (Texas A&M University, Qatar)

Friday, September 14, 09:30 - 11:00 (VIS)

S5: MACHINE LEARNING APPLICATIONS

Chair: Damir Pintar (University of Zagreb, Croatia)

A Recommendation System for Shared-Use Mobility Service

Eduardo Lúcio Lasmar, Jr. (Universidade Federal de Lavras, Brazil); Renata Rosa (University of São Paulo, Brazil); Demóstenes Zegarra Rodríguez (Federal University of Lavras, Brazil)

Annotating Exam Questions Through Automatic Learning Concept Classification

Damir Pintar and Domagoj Begušić (FER, Croatia); Frano Škopljanač-Maćina (University of Zagreb, Croatia); Mihaela Vranić (University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia)

A Highly Configurable Flexible Analytic Model for MCI/Frailty Risk Detection in Age-friendly Cities

Vladimir D. Urošević (Belgrade University Faculty of Organizational Sciences & Belit Ltd. Belgrade, Serbia); Marina Andrić (BELIT, Serbia); Christos Tatsiopoulos (Independent Researcher, Greece); Milan Vukićević (University of Belgrade, Faculty of Organizational Sciences, Serbia)

Using the User's recent Browsing History for Personalized Query Suggestions

Ioan Badarinza, Adrian Sterca and Florian Boian (Babes-Bolyai University, Romania)

A community Driven Approach for Click Bait Reporting

Darius Bufeana and Diana Șotropa (Babeș-Bolyai University, Romania)

Friday, September 14, 09:30 - 11:00 (LASTOVO)

S6: SIGNAL PROCESSING AND CODING

Chair: Matko Šarić (University of Split, Croatia)

Network-assisted DASH by Utilizing Local Caches at Network Edge

Antti Heikkinen (VTT Technical Research Centre of Finland, Finland)

Comparison study on H.264/AVC, H.265/HEVC and VP9 Coded Video Streams for Service IPTV

Tadeus Uhl (Maritime University of Szczecin/Poland, Poland); Krzysztof Nowicki (Gdansk University of Technology, Poland); Janusz Henryk Klink (Wrocław University of Science and

Technology, Poland); Christian Hoppe (Nextragen Solutions GmbH, Germany)

Improving a Parametric Model for Speech Quality Assessment in Wireless Communication Systems

Demóstenes Zegarra Rodríguez (Federal University of Lavras, Brazil); Gabriel F. Pivaro (National Institute of Telecommunications, Brazil); Renata Rosa (University of São Paulo, Brazil); Gabriel Mittag (Technische Universität Berlin, Germany); Sebastian Möller (Quality and Usability Lab, TU Berlin & DFKI, Berlin, Germany)

Deploying Time-based Sampling Techniques in Software-Defined Networking

Solange Rito Lima (Centro Algoritmi, University of Minho, Portugal); João Marco C. Silva (HASLab, INESC TEC & Universidade do Minho, Portugal); David Teixeira (Centro Algoritmi, Universidade do Minho, Portugal)

Adaptive Switching Method with AMC and FSS

Shun Kojima, Takashi Akao, Koya Watanabe, Masato Katsuno, Kazuki Maruta and Chang-Jun Ahn (Chiba University, Japan)

Minutiae Detection by Enhancement of Fingerprint Images in Spatial and Wavelet Domain inside ROI

Indrit Enesi and Argenti Lala (Polytechnic University of Tirana, Albania); Elma Zana (Polytechnic University of Tirana & Polytechnic University of Tirana, Albania); Sanije Cela (Information Technology Faculty, Polytechnic University of Tirana, Albania)

The Concept of the Decision Support System to Plan the Reverse Logistics in Automotive Industry

Irina Makarova and Ksenia Shubenkova (Kazan Federal University, Russia); Anton Pashkevich (Cracow University of Technology, Poland)

Friday, September 14, 14:30 - 16:00 (ŠOLTA)

S7: SOFTWARE DEVELOPMENT METHODS

Chair: Darko Huljenić (Ericsson Nikola Tesla, Croatia)

A Simulink-Based Rapid Prototyping Workflow for Optimizing Software/Hardware Programming

Asma Rebaya, Kaouther Gasmi, Salem Hasnaoui (National School of Engineering of Tunis, Tunisia)

Improving Software Fault Prediction with Threshold Values

Raed Shatnawi (Jordan University of Science and Technology, Jordan)

Thursday, September 13, 14:30 - 16:00 (BRAČ)

P1: POSTERS / ABSTRACTS SESSION

Chair: Matko Šarić (University of Split, Croatia)

Stimulus Artifact Removal using Matrix Pencil Method

Zied Mizouri (Clermont-Auvergne University France, France); Khalil El Khamlichi Drissi (Université Clermont Auvergne & Institut Pascal, France); Lenaïc Monconduit (Clermont Auvergne University, Inserm, France); Christophe Pasquier (Université Blaise Pascal, France); Benoît Sion and François Gabrielli (Clermont Auvergne University, Inserm, France)

Towards Reliable IoT: Testing LoRa Communication

Hrvoje Rudeš and Ivana Nizetic Kosovic (Ericsson Nikola Tesla, Croatia); Mario Galalj and Toni Perkovic (University of Split, Croatia)

SPECIAL SESSIONS, SYMPOSIA AND WORKSHOPS

SS1: SPECIAL SESSION ON AD-HOC&SENSORS NETWORKS AND IoT

Friday, September 14, 09:30 - 11:00 (ŠOLTA)

SS1: Special Session on Ad Hoc&Sensor Networks and IoT

Chair: Petar Šolić (University of Split, Croatia)

An Efficient Multi-Group Key Management Protocol for Internet of Things

Mohamed Ali Kandi; Hicham Lakhlef and Abdelmadjid Bouabdallah (Universite de Technologie de Compiègne, Compiègne, France); Yacine Challal (Ecole nationale Supérieure d'Informatique, Algiers, Algeria)

Hybrid AF/DF based MAC Protocol over Shadowed Channels for Wireless Sensor Networks

Amira Ben Ammar; Ali Dziri and Michel Terré (CEDRIC-CNAM, France); Habib Youssef (PRINCE/ISITCOM, Tunisia)

Intentional Collisions for Preventing Illegal Overhearing by Eavesdropper Node in Wireless Sensor Networks

Hiroaki Higaki and Masahiro Okuri (Tokyo Denki University Tokyo, Japan)

Fountain Data Estimation within Bayesian Model Classification in Wireless Sensor Network

Fatma BelAbed (National Engineering School of Tunis, Tunisia); Ridha R. Bouallegue, B. (Ecole Supérieure des Communications de Tunis, Tunisia)

Adaptive Traffic Light Control System Based on WSN: Algorithm Optimization and Hardware Design

Khaled Zaatouri (UTM, ENIT, Tunisia); Mohamed Hechmi Jeridi (University of Tunis El Manar (UTM) National Engineering School of Tunis (ENIT), Tunisia); Tahar Ezzedine (Enit, Tunisia)

SS2: SPECIAL SESSION ON SECURITY AND DIGITAL FORENSICS

Thursday, September 13, 09:30 - 11:00 (LASTOVO)

SS2: Special Session on Security and Digital Forensics

Chair: Toni Perković (University of Split, Croatia)

Intrusion Detection Using Data Fusion and Machine Learning

Mohamed Hechmi Jeridi; Hacen Khlaifi; Amira Zrelli; Amine Bouatay and Tahar Ezzedine (National Engineering School of Tunis, University Tunis El Manar, Tunisia)

Two Countermeasures against Reaction Attacks on LEDApk and other QC-MDPC and QC-LDPC based McEliece Cryptosystems in ARQ Setting

Peter Farkaš (Slovak University of Technology & Pan-European University, Slovakia)

A Token-based Protocol for Securing MQTT Communications

Marco Calabretta and Riccardo Pecori (eCampus University, Italy); Luca Veltri (University of Parma, Italy)

Malware Detection using Opcode Trigram Sequence with SVM

Amr Elkhawas and Nashwa Abdelbaki (Information Security-School of Communication and Information Technology, Nile University, Cairo)

Evaluation of Authentication Based Elliptic Curve Cryptography in Wireless Sensor Networks in IoT Context

Balkis Bettoumi and Ridha Bouallegue (University of Carthage, Tunisia)

SEnSE - An Architecture for a Safe and Secure Integration of Safety-Critical Embedded Systems

Kai Höfig (Siemens AG, Germany); Amir Klug (STMicroelectronics, Germany)

LiaaS: Lawful Interception as a Service

Mehrnoosh Monshizadeh and Vikramajeet Khatri (Nokia Bell Labs, Finland); Mohammadali Varfan (Bonn-Rhein-Sieg University of Applied Science, Germany); Raimo Kantola (Aalto University, Espoo, Finland)

SS3: SPECIAL SESSION ON QoS IN WIRED AND WIRELESS NETWORKS

Thursday, September 13, 14:30 - 16:00 (VIS)

SS3: Special Session on QoS in Wired and Wireless Networks

Chair: Pascal Lorenz (University of Haute Alsace, France)

TDMA Scheduling Strategies for Vehicular Ad Hoc Networks: From a Distributed to a Centralized Approach

Mohamed Elhadad and Paul Muhlethaler (INRIA, France); Anis Laouiti (TELECOM SudParis, France)

Content-agnostic Web Browsing Quality Assessment

Janusz Henryk Klink and Pawel Bardowski (Wrocław University of Science and Technology, Poland); Tadeus Uhl (Maritime University of Szczecin, Poland)

DVB-T2 Coverage Area in Albanian Allotments using existing Analog TV Transmitting Antennas

Bexhet Kamo, Elson Agastra and Shkelzen Cakaj (Faculty of Information Technology, Polytechnic University of Tirana, Albania)

Quantifying the Quality Improvement of MIMO Transmission Systems in VoIP Communication

Demóstenes Zegarra Rodríguez (Federal University of Lavras, MG, Brazil); Gabriel F. Pivaro (INATEL, MG, Brazil); Renata L. Rosa (Federal University of Lavras, MG, Brazil); Gabriel Mittag (Technische Universität Berlin, Germany); Sebastian Moller (Technische Universität Berlin and 4Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI), Germany)

Modeling for a QoS-Efficient Real-Time Video Conferencing System in the Cloud

Akilu D Tesfamichael; Vicky Liu; Ernest Foo and William Caelli
(Queensland University of Technology, Brisbane, Australia)

SS4: SPECIAL SESSION ON SMART ENVIRONMENTS AND IoT

Thursday, September 13, 11:30 - 13:00 (VIS)

SS4: Special Session on Smart Environments and IoT

Chair: Maja Stella (University of Split, Croatia)

A Smart Precision-Agriculture Platform for Linear Irrigation Systems

Jacopo Aleotti, Michele Amoretti, Alessandro Nicoli and Stefano Caselli (University of Parma, Italy)

A Packet Routing Technique for IoT Based on Least Delay Paths Estimated Through the Measurements of Packet Arrival Rate and Length

Joao Marcos Silva (Unifaccamp, Brazil); Shusaburo Motoyama (Faculty of Campo Limpo Paulista - Faccamp; Universidade Estadual De Campinas - Unicamp, Brazil)

Calculating the Influence of Tagging People on Sentiment Analysis

Breno Ramos and Eduardo Lúcio Lasmar, Jr. (Universidade Federal de Lavras, Brazil); Demóstenes Zegarra Rodríguez (Federal University of Lavras, Brazil); Renata Rosa (University of São Paulo, Brazil); André Grutzmann (Universidade Federal de Lavras, Brazil)

Micro-Expressions Detection Based on Micro-Motions Dense Optical Flows

Sergiu Cosmin Nistor (Faculty of Mathematics and Computer Science, Babes Bolyai University, Romania); Adrian Sergiu Darabant (Babes Bolyai University; Cluj Napoca, Romania); Diana Borza (Faculty of Automation and Computer Science, Technical University, Romania)

SS5: SPECIAL SESSION ON ADVANCED EDUCATIONAL TECHNOLOGIES

Saturday, September 15, 09:30 - 11:00 (LASTOVO)

SS5: Special Session on Advanced Educational Technologies

Chair: Ani Grubišić (University of Split, Croatia)

Development and Evaluation of Word Embeddings for Morphologically Rich Languages

Daniel Vasić (University of Mostar & Faculty of Science Math and Education, Bosnia and Herzegovina); Emil Brajković (University of Mostar, Bosnia and Herzegovina)

Usage of the Blended Learning Model at the Faculty of Education

Matea Markić (University of Mostar, Bosnia and Herzegovina); Tomislav Volarić (University of Mostar, Bosnia and Herzegovina)

Time Spent Online as an Online Learning Behavior Variable in a Blended Learning Environment with an Ontology-Based Intelligent Tutoring System

Ines Šarić (University of Split, Faculty of Science, Croatia); Ljiljana Šerić (University of Split - Faculty of El. Eng., Mech. Eng. and Naval Arch., Croatia)

SYM1/I: SYMPOSIUM ON GREEN NETWORKING AND COMPUTING I

Saturday, September 15, 09:30 - 11:00 (ŠOLTA)

SYM1/I: Symposium on Green Networking and Computing I

Chair: Josip Lorincz (University of Split, Croatia)

SeDuCe: a Testbed for Research on Thermal and Power Management in Datacenters

Jonathan Pastor (IMT Atlantique, France); Jean-Marc Menaud (IMT-A & INRIA & LS2N, France)

QoS-aware Energy-Efficient Algorithms for Ethernet Link Aggregates in Software-Defined Networks

Pablo Fondo Ferreiro (University of Vigo, Spain); Miguel Rodríguez Pérez and Manuel Fernández Veiga (Universidade de Vigo, Spain)

Decentralised Multi-Agent based Demand Response for Smart Grid with Inclusion of Green Data Centre

Rasoul Rahmani, Irene Moser, Antonio L Cricenti and Hediye Karimi (Swinburne University of Technology, Australia)

SYM1/II: SYMPOSIUM ON GREEN NETWORKING AND COMPUTING II

Saturday, September 15, 11:30 - 13:00 (ŠOLTA)

SYM1/II: Symposium on Green Networking and Computing II

Chair: Josip Lorincz (University of Split, Croatia)

Big Data Challenges and Trade-offs in Energy Efficient Internet of Things systems

Jelena Čulić Gambiroža and Toni Mastelić (Ericsson Nikola Tesla, Croatia)

A Fuzzy-logic Based Energy-efficient Clustering Algorithm for the Wireless Sensor Networks

Quan Wang, Deyu Lin and Pengfei Yang (Xidian University, P.R. China); Zhiqiang Zhang (University of Leeds, United Kingdom (Great Britain))

Mis-detection Probability Analyses of OFDM Signals in Energy Detection Cognitive Radio Systems

Josip Lorincz and Dinko Begušić (University of Split, Croatia); Ivana Ramljak (Elektroprenos-Elektroprijenos BiH, a.d. Banja Luka, BiH)

SYM2: SYMPOSIUM ON ENVIRONMENTAL ELECTROMAGNETIC COMPATIBILITY (EEMC)

Saturday, September 15, 11:30 - 13:00 (LASTOVO)

SYM2: Symposium on Environmental Electromagnetic Compatibility (EEMC)

Chairs: Dragan Poljak and Vesna Roje (University of Split, Croatia)

On the Frequency Domain Analysis of Straight Thin Wire Radiating Above a Lossy Half-Space

Dragan Poljak (University of Split, Croatia); Milica Rančić (UKK, Mälardalen University, Sweden)

Analysis of LPDA Radiation Above a Multilayer

Dragan Poljak and Vicko Dorić (University of Split, Croatia);
Mario Birkic (Air Traffic Control, Pula, Croatia)

An Analysis of the Distribution of Inter-Flash Time Intervals in the Area of the Sântis Tower

Antonio Sunjerga (EPFL, Switzerland); Marcos Rubinstein (University of Applied Sciences of Western Switzerland, Averdun, Switzerland); Gerhard Diendorfer (OVE Service GmbH, Austria); Farhad Rachidi (EPFL, Switzerland)

Transient Impedance of Interconnected Wind Turbine Grounding Systems

Antonio Sunjerga (EPFL, Switzerland); Quanxin Li (Wuhan University, P.R. China); Dragan Poljak (University of Split, Croatia); Marcos Rubinstein (University of Applied Sciences of Western Switzerland, Averdun, Switzerland); Farhad Rachidi (EPFL, Switzerland)

Electric Field Radiated in the Air by a Dipole Antenna Placed Above a Two-Layered Lossy Half Space

Anna Susnjara (University of Split, Croatia); Vicko Doric (University of Split, FESB, Croatia); Dragan Poljak (University of Split, Croatia)

Stochastic Thermal Dosimetry for the Three Compartment Head Model

Anna Susnjara and Mario Cvetković (University of Split, Croatia); Hrvoje Dodig (University of Split, Faculty of Maritime Studies & Naval Electronic Center, PCE, Croatia); Dragan Poljak (University of Split, Croatia)

FDTD Modeling of the Landmine Detection via Ground Penetrating Radar Response

Silvestar Sesnic (University of Split, Croatia)

Social Robot Selection: A Case Study in Education

George A Papakostas, Athanasios Strolis, Fotis Panagiotopoulos and Charalabos Aitsidis (Eastern Macedonia and Thrace Institute of Technology (EMaTTech), Greece)

Open-Source Robotics: Investigation on Existing Platforms and Their Application in Education

Eleni Vrochidou (Eastern Macedonia and Thrace Institute of Technology (EMaTTech), Greece); Michail Manios, George A Papakostas, Charalabos Aitsidis and Fotis Panagiotopoulos (Eastern Macedonia and Thrace Institute of Technology (EMaTTech), Greece)

Identifying Needs of Robotic and Technological Solutions for the Classroom

Snezhana Kostova and Maya I. Dimitrova (Bulgarian Academy of Sciences, Bulgaria); Svetoslava Saeva (Neofit Rilski South West University Blagoevgrad, Croatia); Milen Zamfirov (St. Kliment Ohridski Sofia University Sofia, Bulgaria); Vasileios Kaburlasos, Eleni Vrochidou, George Papakostas and Theodore Pachidis (Eastern Macedonia and Thrace Institute of Technology Kavala, Greece); Mirjana Bonkovic, Stanko Kruzic, Tea Marasovic, Josip Music and Vladan Papic (University of Split, Croatia)

WORKSHOP ON ROBOTIC AND ICT ASSISTED WELLBEING I

Saturday, September 15, 09:30 - 11:00 (VIS)

Workshop on Robotic and ICT Assisted Wellbeing I

Chair: Mirjana Bonković (University of Split, Croatia)

Object Classification for Child Behavior Observation in the Context of Autism Diagnostics Using a Deep Learning-based Approach

Mihael Presecan, Frano Petric and Zdenko Kovacic (University of Zagreb, Croatia)

Social Robot NAO as a Self-Regulating Didactic Mediator: a Case Study of Teaching/Learning Numeracy

Eleni Vrochidou (Eastern Macedonia and Thrace Institute of Technology (EMaTTech), Greece); Aouatif Najoua (ENSET, University Hassan II, Greece); Chris Lytridis and Michail Saloniadis (Eastern Macedonia and Thrace Institute of Technology (EMaTTech), Greece); Vassilios Ferelis (Eastern Macedonia Institute of Technology Technology (EMaTTech), Greece); George A Papakostas (Eastern Macedonia and Thrace Institute of Technology (EMaTTech), Greece)

Development and Applications of a 3D Printed Walking Robot - Big-Foot

Ivan Chavdarov (Institut of Robotics, Bulgarian Academy of Sciences & Sofia University "St. Kliment Ohridski", FMI, Bulgaria); Bozhidar Naydenov, Snezhana Kostova and Aleksandar Krastev (Institute of Robotics, Bulgarian Academy of Sciences, Bulgaria); Anna Lekova (Bulgarian Academy of Sciences, Bulgaria)

WICT: WORKSHOP ON INFORMATION AND COMMUNICATION TECHNOLOGIES

Thursday, September 13, 14:30 - 16:00 (HVAR)

WICT/I: Workshop on Information and Communication Technologies I

Chair: Julije Ozegovic (University of Split, Croatia)

Teaching Requirements Engineering to Computer Science Graduate Students. An Experience Report

Grigoreta Cojocar and Adriana Guran (Babes-Bolyai University, Cluj-Napoca, Romania)

LIMO (Live MOonitor): An Eye-Catching Open-Source Tool for Real-Time Visualization of Network Traffic

Denis Ferraretti (LepidaSpA & University of Ferrara, Italy); Stefano Bonino (LepidaSpA, Italy); Filippo Turetta (University of Ferrara, Italy); Gianluca Mazzini (University of Ferrara and LepidaSpA, Italy)

Fundamental Computer Skills: Integrating Technology into Teaching for Preschool Children in Romania

Adriana Guran and Grigoreta Cojocar (Babes-Bolyai University, Cluj-Napoca, Romania); Anamaria Moldovan (Albinuta Kindergarten, Cluj-Napoca, Romania)

A Low-Cost Energy Conservation Strategy For M2M Differentiated Services in 5G/HetNets

Kaouthar Taleb Ali, Sonia Ben Rejeb and Zied Choukair (Sup'com, Tunisia)

Implementation of the Application Layer in the Business Process Management System

Josip Lorincz, Anamarija Talaja and Dinko Begusic (University of Split, Croatia)

Sentiment Analysis of Movie Reviews

Katarina Anđela Vrgoč, Matija Pauković, Mladen Russo and Matko Saric (University of Split, Croatia)

Saturday, September 15, 11:30-13:00 (VIS)

WICT/II: Workshop on Information and Communication Technologies II

Chair: Snezhana Kostova (Bulgarian Academy of Sciences Sofia, Bulgaria)

Terrain Search Strategy in Search and Rescue Mission

Danijel Zelenika (University of Mostar, Bosnia and Herzegovina) and Mirjana Bonković (University of Split, Croatia)

Internet of Things (IoT): A Way to Improve Human Wellbeing

Antonios Sourmelis, Anestis Staikopoulos, Venetis Kanakaris and George A Papakostas (Eastern Macedonia and Thrace Institute of Technology (EMaTTech), Greece)

Improving Management of Logistics By Integrating Blockchain, IoT and Drones Towards Wellbeing

Venetis Kanakaris, Anestis Staikopoulos, Antonios Sourmelis and George A Papakostas (Eastern Macedonia and Thrace Institute of Technology, Greece)

Acquiring Digital Skills and New Qualifications by Introducing Modern Technologies in Education

Snezhana Kostova (Institute of Robotics, Bulgarian Academy of Sciences Sofia, Bulgaria); Ivan Chavdarov (Institut of Robotics, Bulgarian Academy of Sciences & Sofia University "St. Kliment Ohridski", FMI, Bulgaria); Aleksandar Krastev (Institut of Robotics, Bulgarian Academy of Sciences, Bulgaria); Anna Lekova and Maya Dimitrova (Bulgarian Academy of Sciences, Bulgaria)

Thursday, September 13, 14:30 - 16:00 (BRAČ)

P2: POSTER / DEMO PROFESSIONAL SESSION

Chair: Matko Šarić (University of Split, Croatia)

Image-based 3D Reconstruction: Exploring Workflow with Open-source Software

Ivan Todorčić, Ana Kuzmanić Skelin and Mirjana Bonković (University of Split, Croatia)

Near Optimal Solution of Nurse Rostering Problem for Small Group

Mirko Gradisar (University of Ljubljana & Faculty of Economics, Slovenia); Luka Tomat (University of Ljubljana, Slovenia)

TIMETABLE A: TECHNICAL PROGRAM

Bluesun Resort Velaris, Supetar (Island of Brač), Thursday, September 13			
Time/Hall	ŠOLTA	VIS	LASTOVO
08:30	REGISTRATION*		
09:30–11:00	S1/I: Wireless Communications I	S3: Optical Communications	SS2: Special Session on Security and Digital Forensics
11:00–11:30	Coffee Break		
11:30–13:00	S1/II: Wireless Communications II	SS4: Special Session on Smart Environments and IoT	S4: Network Design and Management
13:00–14:30	Lunch		
14:30–16:00	S2: 5G Technologies	SS3: Special Session on QoS in Wired and Wireless Networks	SYM3: Symposium on Information Security and Intellectual Property (ISIP) Invited talk: Marija Boban
16:00–16:30	Coffee Break		

Bluesun Resort Velaris and Waterman Svpetrvs Resort, Supetar (Island of Brač), Friday, September 14			
Time/Hall	ŠOLTA	VIS	LASTOVO
09:30–11:00	SS1: Special Session on Ad Hoc&Sensor Networks and IoT	S5: Machine Learning Applications	S6: Signal Processing and Coding
11:00–11:30	Coffee Break		
11:30–13:00	OPENING CEREMONY (WATERMAN FORUM - WATERMAN SVPETRVS RESORT)		
	Keynote Speech (WATERMAN FORUM - WATERMAN SVPETRVS RESORT): Azimeh Sefidcon (Director Research, Ericsson), Industrial cloud, Distributed Edge computing for 5G		
13:00–14:30	Conference Luncheon		
14:30–16:00	S7: Software Development Tools WSEP: Workshop on Software Engineering in Practice	Workshop on Doctoral Studies	Business Forum: Broadband Internet Access
16:00–16:30	Coffee Break		
18:00-19:00	Ferry Transfer to Port of Split		
19:00-20:00	Guided Tour in Split		
20:00- 21:30	Welcome Party in Split		

Bluesun Resort Velaris, Supetar (Island of Brač), Saturday, September 15			
Time/Hall	ŠOLTA	VIS	LASTOVO
09:30–11:00	SYM1/I: Symposium on Green Networking and Computing I	Workshop on Robotic and ICT Assisted Wellbeing I	SS5: Special Session on Advanced Educational Technologies
11:00–11:30	Coffee Break		
11:30–13:00	SYM1/II: Symposium on Green Networking and Computing II	Workshop on Robotic and ICT Assisted Wellbeing II WIICT/II: Workshop on ICT II	SYM2: Symposium on Environmental Electromagnetic Compatibility (EEMC)
12:30–14:00	Lunch		
14:00–17:30	Conference Trip		

* Registration: Thursday (08:30 – 16:00), Friday (08:30 – 11:00), (14:30 – 17:00), Saturday (08:30 – 10:30)

TIMETABLE B: WORKSHOPS, TUTORIALS, BUSINESS FORUM

Bluesun Resort Velaris, Supetar (Island of Brač), Thursday, September 13		
Time/Hall	HVAR	BRAČ
11:00–11:30	Coffee Break	
11:30–13:00	How Power Efficiency is Tailoring Nokia's Technology	Tutorial T1 (P. Lorenz) <i>Advanced Architectures for Next Generation Wireless Networks</i>
13:00–14:30	Lunch	
14:30 – 16:00	WIICT/I: Workshop on ICT I	P1: Posters / Abstracts Session P2: Poster / Demo Professional Session
16:00–16:30	Coffee Break	

Bluesun Resort Velaris, Supetar (Island of Brač), Friday, September 14		
Time/Hall	HVAR	BRAČ
09:30–11:00	Tutorial T2 (B. Kovacs) 5G Technologies and Use Cases	Tutorial T6 (J. Wiart) Managment of the variability and uncertainty in electromagnetism and dosimetry using advanced parsimonious stochastic methods
11:00–11:30	Coffee Break	
11:30–13:00	OPENING CEREMONY (WATERMAN FORUM - WATERMAN SVPETRVRS RESORT)	
	Keynote Speech (WATERMAN FORUM - WATERMAN SVPETRVRS RESORT): Azimeh Sefidcon (Director Research, Ericsson), Industrial cloud, Distributed Edge computing for 5G	
13:00–14:30	Conference Luncheon	
14:30-15:15	Tutorial T3 (Z. Sipus) Structuring Electromagnetic Problems – A Clear Path in the Design of Electromagnetic Structures	Big Data Panel: Is data the new oil?
15:15-16:00	Tutorial T5 (M. Rancic) Mathematical modelling with applications in antenna theory, EMC and actuarial mathematics	
16:00–16:30	Coffee Break	
18:00-19:00	Ferry Transfer to Port of Split	
19:00-20:00	Guided Tour in Split	
20:00- 21:30	Welcome Party in Split	

Bluesun Resort Velaris, Supetar (Island of Brač), Saturday, September 15		
Time/Hall	HVAR	BRAČ
09:30–11:00	Presentation of the book: D.Poljak, K. Drissi, Computational Methods in EMC, Wiley 2018. Tutorial T4 (D. Poljak) Tutorial T7 (Khalil El Khamlichi Drissi)	WESC: Ericsson Summer Camp 2018 Workshop
11:00–11:30	Coffee Break	
11:30–13:00	Workshop on Innovation in ICT (HVAR)	
12:30–14:00	Lunch	
14:00–17:30	Conference Trip	

Thursday, September 13, 14:30 - 16:00 (LASTOVO)

SYM3: SYMPOSIUM ON INFORMATION SECURITY AND INTELLECTUAL PROPERTY (ISIP)

INVITED TALK: MARIJA BOBAN

Information Security and New General Data Protection Regulation (GDPR)

Marija Boban, PhD

Associate Professor, University of Split Faculty of Law, Croatia

Summary:

In this lecture keynote speaker will present the impact assessment of the new EU Data Protection Regulation and the legal remedies obligatory to the public and private sector in the implementation of General data protection regulation (GDPR) which has brought the modernized data protection framework in Europe in whole. The new rules which have established the European Data Protection framework are introducing also the new definition of personal data and replacing current inconsistent national laws with a view to increasing the level of data protection and increasing legal certainty in the growing digital economy.

Keywords: data protection, EU, information security, GDPR, legislation, personal data.



Biography: *Marija Boban is an expert in the field of information security and GDPR and holds a PhD in the field of Security and Data Protection with focus on protection of personal data and a master degree in e-business. She started her career as a research assistant on the projects of informatization of local and regional government while Croatia was making the first steps in building eGovernment. Later she continued her academic work with focus on information security and combined the knowledge of information and communication sciences with field of law science and regulation. Published over 90 scientific papers, of which the large number is in the field of information security, IoT and personal data protection, and she is also author and co-author of 5 university textbooks. She held various technical and leadership positions in esteemed scientific journals and she currently as Assistant Professor holds the position of the Head of the Department for Economic and Financial Science at the Faculty of Law University of Split.*

SYM3: Symposium on Information Security and Intellectual Property (ISIP)

Chairs: Marija Boban (University of Split, Croatia) and Gordan Ježić (University of Zagreb, Croatia)

Some Aspects of Legislation of Food Labeling in the EU

Dinka Šago and Ivan Vukušić (University of Split & Faculty of law, Croatia)

Implications of GDPR Implementation Act and the GDPR on Workplace Video Surveillance in Croatia

Nina Gumzej and Dražen Dragičević (University of Zagreb Faculty of Law, Croatia)

Influence of IT on Accounting Practice and Exposure to Cyber Attacks

Marija Boban (University of Split & Faculty of law, Croatia), Valentina Vinšalek Stipić (Polytechnic Marko Marulić Knin, Croatia) and Josipa Grabić (Geoprodukt doo Split, Croatia)

TUTORIALS

TUTORIAL T1

Thursday, September 13

11:30-13:00 (BRAČ)

Pascal Lorenz, PhD

University of Haute Alsace, France

Advanced Architectures for Next Generation Wireless Networks

Abstract: Emerging Internet Quality of Service (QoS) mechanisms are expected to enable wide spread use of real time services such as VoIP and videoconferencing. The “best effort” Internet delivery cannot be used for the new multimedia applications. New technologies and new standards are necessary to offer Quality of Service (QoS) for these multimedia applications. Therefore new communication architectures integrate mechanisms allowing guaranteed QoS services as well as high rate communications.

The service level agreement with a mobile Internet user is hard to satisfy, since there may not be enough resources available in some parts of the network the mobile user is moving into. The emerging Internet QoS architectures, differentiated services and integrated services, do not consider user mobility. QoS mechanisms enforce a differentiated sharing of bandwidth among services and users. Thus, there must be mechanisms available to identify traffic flows with different QoS parameters, and to make it possible to charge the users based on requested quality. The integration of fixed and mobile wireless access into IP networks presents a cost effective and efficient way to provide seamless end-to-end connectivity and ubiquitous access in a market where the demand for mobile Internet services has grown rapidly and predicted to generate billions of dollars in revenue.

This tutorial covers to the issues of QoS provisioning in heterogeneous networks and Internet access over future 5G wireless networks. It discusses the characteristics of the Internet, mobility and QoS provisioning in wireless, IoT and mobile IP networks. This tutorial also covers routing, security, baseline architecture of the inter-networking protocols and end to end traffic management issues.



Biography: *Pascal Lorenz received his M.Sc. (1990) and Ph.D. (1994) from the University of Nancy, France. Between 1990 and 1995 he was a research engineer at WorldFIP Europe and at Alcatel-Alsthom. He is a professor at the University of Haute-Alsace, France, since 1995. His research interests include QoS, wireless networks and high-speed networks. He is the author/co-author of 3 books, 3 patents and 200 international publications in refereed journals and conferences.*

He was Technical Editor of the IEEE Communications Magazine Editorial Board (2000-2006), Chair of Vertical Issues in Communication Systems Technical Committee Cluster (2008-2009), Chair of the Communications Systems Integration and Modeling Technical Committee (2003-2009), Chair of the Communications Software Technical Committee (2008-2010) and Chair of the Technical Committee on Information Infrastructure and Networking (2016-2017). He has served as Co-Program Chair of IEEE WCNC'2012 and ICC'2004, Executive Vice-Chair of ICC'2017, tutorial chair of VTC'2013 Spring and WCNC'2010, track chair of PIMRC'2012, symposium Co-Chair at Globecom 2007-2011, ICC 2008-2010, ICC'2014 and '2016. He has served as Co-Guest Editor for special issues of IEEE Communications Magazine, Networks Magazine, Wireless Communications Magazine, Telecommunications Systems and LNCS. He is associate Editor for International Journal of Communication Systems (IJCS-Wiley), Journal on Security and Communication Networks (SCN-Wiley) and International Journal of Business Data Communications and Networking, Journal of Network and Computer Applications (JNCA-Elsevier). He is senior member of the IEEE, IARIA fellow and member of many international program committees. He has organized many conferences, chaired several technical sessions and gave tutorials at major international conferences. He was IEEE ComSoc Distinguished Lecturer Tour during 2013-2014.

Benedek Kovacs, PhD*Budapest University of Technology and Economics, Hungary***5G Technologies and Use Cases**

Abstract: It is expected that 5G network will enable a great variety of use cases for Industrial automation, Smart metering, IoT as well as advanced media use cases. Network slicing is developed to do this in an economical and secure way. My short presentation will focus on the requirements the different IoT use cases put on the 5G network and will give a short technical background of the solutions, including standardization just as well as on the open questions. I would like to conclude with the short demo of industrial IoT.

In the first part of the presentation network evolution will be presented starting from traditional 2G and 3G networks towards 4G.

Meanwhile, some key architectural elements will be introduced such as Radio Access Network and Core Network. Key motivating factors for each evolutionary steps will be discussed concluding with the evolution towards the 5G network architecture in the future.

We will start with an overview of Low Power Wide Area Networks and introduce some key technologies behind with the focus on Narrow Band IoT.

The next use case will be a device management use case. The main problem here is to install new network devices with the least human touch. The Industry 4.0 Plug and Produce Field Device use case will be shortly described including a possible adaptation to 3GPP networks. Using such a technology, the operators can enable IoT application developers to install new devices in their system with minimal effort which is an enabler for all kinds of IoT networks. We will co-draw the IoT and 3GPP architectures in this chapter.

The third problem we will outline is the possible deployment of an augmented reality application in an edge computing fashion. The distributed cloud concept will be introduced and the demonstration will be explained in detail. The demonstration will apply machine learning techniques to perform object recognition and position estimation for augmented reality use cases."



Biography: Benedek Kovacs has MSC in information engineering and PhD in Mathematics. He started his professional career at Ericsson Hungary as a software developer and tester in 2005, later worked as a system engineer. Benedek was the innovation manager of the Budapest R&D site between 2011 and 2013 where his primary role was to establish an innovative organizational culture and launch internal startups on worthy ideas. As a network system engineer, he has developed the 4G VoLTE solution as a characteristics, performance management and reliability specialist. Today, he is working on 5G networks coordinating global engineering projects. His specialization and focus is on latency and reliability critical applications such as AR/VR, smart grid communication support and industrial IoT, automation.

Zvonimir Šipuš, PhD*Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia***Structuring Electromagnetic Problems – A Clear Path in the Design of Electromagnetic Structures**

Abstract: Design of electromagnetic devices in most cases is a very demanding engineering task. As analytical solutions can only be carried out for canonical geometries, in practice the design of electromagnetic structures is done solely with the help of commercial numerical programs. The lecture will consider the importance of structuring the electromagnetic problem we need to solve. In other words, for a successful construction of a structure, it is necessary to have a clear electromagnetic concept of the device we would like to design, that is, we should not rely solely on the optimization potential offered by every commercial electromagnetic program. The importance of structuring electromagnetic problems will be illustrated by a few examples – on soft and hard surfaces and waveguides with periodic structures having electromagnetic bandgap property. Furthermore, the theorem of equivalence allows us to divide the complex electromagnetic problem into a few simpler sub-problems that can be much simpler to solve. In this way we can build our own software support for the analysis of complex electromagnetic structures. This possibility will be illustrated in several examples, from the construction of an algorithm for calculating Green's functions of multilayer structures to the analysis of an electromagnetic invisible cloak.



Biography: Zvonimir Šipuš was born in Zagreb, Croatia, in 1964. He received the B.Sc. and M.Sc. degrees in electrical engineering from the University of Zagreb, Croatia, in 1988 and 1991, respectively, and the Ph.D. degree in electrical engineering from Chalmers University of Technology, Gothenburg, Sweden, in 1997. From 1988 to 1994, he worked at Rudjer Boskovic Institute, Zagreb, Croatia, as Research Assistant, involved in the development of detectors for explosive gases. In 1994, he joined the Antenna Group at Chalmers University of Technology, where he was involved in research projects concerning conformal antennas and soft and hard surfaces. In 1997, he joined the Faculty of Electrical Engineering and Computing, University of Zagreb, where he is now a Professor. Currently, he is the Head of the Department of Wireless Communications. From 1999 to 2005, he was also an Adjunct Researcher at the Department of

Electromagnetics, Chalmers University of Technology. Since 2006 he was engaged in teaching in the European Doctoral School of antennas (ESoA). His main research interests are in the area of analysis and design of electromagnetic structures and in the area of optical communication and sensor systems. Prof. Šipuš is the author or co-author of more than 50 scientific papers published in scientific journals. He is also the co-author of several EM softwares for analyzing planar and conformal antennas and scatterers. He received the annual national science award in 2006 for research of conformal antennas and periodic structures.

TUTORIAL T4

Saturday, September 15

09:30-10:15 (HVAR)

Dragan Poljak, PhD

University of Split, FESB Split, Croatia

Computational Methods in Electromagnetics: Applications in Electromagnetic Compatibility, Ground Penetrating Radar, Bioelectromagnetics and Magnetohydrodynamics

Abstract: The lecture starts with some general aspects of computational electromagnetics and electromagnetic compatibility (EMC). The introduction outlines some well-established analytical and numerical methods. First, a crash-course on the theory of thin wires is given and related numerical solution methods for various integral equations in both frequency and time domain will be outlined. Computational examples pertaining to dipoles, Yagi-Uda arrays and logarithmic-periodic dipole antennas (LPDA) will be presented. Then, some applications to air traffic control and ground penetrating radar (GPR) will be discussed, as well.

Furthermore, full wave (antenna) models for various thin wire structures, from rather simple to realistic complex geometries, will be outlined. This will be followed by analysis of overhead and buried transmission lines, respectively. In particular, a trade-off between the use of rigorous full wave models and approximate transmission line (TL) approach will be carried out. Particular attention will be focused to the study of PLC (Power Line Communications) configurations, modeling of lightning channel, transient analysis of realistic grounding systems (with particular emphasis to wind turbines).

Then Tutorial will tackle the human exposure to non-ionizing electromagnetic fields. Low frequency, high frequency and transient exposures related to possible adverse health effects will be discussed. Some biomedical application of electromagnetic fields, with particular emphasis on transcranial magnetic stimulation (TMS) and nerve fiber stimulation, will be also mentioned. Furthermore some stochastic analysis methods (featuring the use of stochastic collocation (SC) technique) applied to area of GPR, grounding electrodes, human exposure to electromagnetic fields and biomedical application of electromagnetic fields will be presented. The presentation will end up with some topics in magnetohydrodynamics pertaining to the modeling of plasma physics phenomena for the application in thermonuclear fusion.



Biography: Dragan Poljak was born on 10 October 1965. He received his BSc in 1990, his MSc in 1994 and PhD in electrical engineering in 1996 from the University of Split, Croatia. He is the Full Professor at Department of Electronics, Faculty of electrical engineering, mechanical engineering and naval architecture at the University of Split, and he is also Adjunct Professor at Wessex Institute of Technology. His research interests include frequency and time domain computational methods in electromagnetics, particularly in the numerical modelling of wire antenna structures, and numerical modelling applied to environmental aspects of electromagnetic fields. To date Professor Poljak has published nearly 200 journal and conference papers in the area of computational electromagnetics, seven authored books and one edited book, by WIT Press, Southampton-Boston, and one book by Wiley, New Jersey. Professor Poljak is a member of IEEE, a member of the Editorial Board of the journal *Engineering Analysis with Boundary Elements*, and co-chairman of many WIT International Conferences. He is also editor of the WIT Press Series *Advances in Electrical Engineering and Electromagnetics*. In June 2004, professor Poljak was awarded by the National Prize for Science. In 2013 he was awarded by the Nikola Tesla Prize for achievements in Technical Sciences, in 2016. He received the prize for the achievements in engineering education from Croatian IEEE chapter and in 2017 he received the prize for science from the University of Split. From 2011 to 2015 professor Poljak was the Vice-dean for research at the Faculty of electrical engineering, mechanical engineering and naval architecture. In 2011 professor Poljak became a member of WIT Board of Directors. In June 2013 professor Poljak became a member of the board of the Croatian Science Foundation.

Poljak is a member of IEEE, a member of the Editorial Board of the journal *Engineering Analysis with Boundary Elements*, and co-chairman of many WIT International Conferences. He is also editor of the WIT Press Series *Advances in Electrical Engineering and Electromagnetics*. In June 2004, professor Poljak was awarded by the National Prize for Science. In 2013 he was awarded by the Nikola Tesla Prize for achievements in Technical Sciences, in 2016. He received the prize for the achievements in engineering education from Croatian IEEE chapter and in 2017 he received the prize for science from the University of Split. From 2011 to 2015 professor Poljak was the Vice-dean for research at the Faculty of electrical engineering, mechanical engineering and naval architecture. In 2011 professor Poljak became a member of WIT Board of Directors. In June 2013 professor Poljak became a member of the board of the Croatian Science Foundation.

Milica Rančić, PhD*Mälardalen University, UKK, Division of Applied Mathematics, Sweden***Mathematical modelling with applications in antenna theory, EMC and actuarial mathematics**

Abstract: Tutorial describes some approaches to mathematical modelling of physical problems. Applications will be illustrated on examples from the areas of antenna theory, grounding systems analysis, modelling of discharge currents and actuarial mathematics.

We start with problems related to numerical analysis of sources in presence of a lossy medium. A well-known problem of dealing with so-called Sommerfeld type integrals occurs in these analysis. Their approximate evaluation has been of great interest for researchers in the areas of antenna theory and grounding systems analysis. These integrals arise in the expressions describing the electromagnetic field in the surroundings of such structures when they are located above/inside a semi-conducting media. The fact that these integrals don't have a closed form solution, enticed researchers to approximately evaluate them either by employing a numerical integration technique, or using some kind of procedure that will approximate them and allow their analytical evaluation.

Second part of the tutorial deals with modelling of lightning and electrostatic discharge currents. A general function that would be able to reproduce desired waveshapes of these currents is needed, such that analytical solutions for their derivatives, integrals, and integral transformations, exist. We present a review of existing models, their advantages and disadvantages and possible extensions.

Finally, we discuss modelling of mortality rates of living organisms or equipment. Variation of mortality over a life span has different characteristics that put constraints and requirements on a model developed to represent it. A well-known problem that complicates modelling of human mortality rates is the "accident hump" occurring in early adulthood. We review existing models and discuss their properties and application to mortality forecasting and pricing life insurances.



Biography: Milica Rančić was born in Niš, Serbia, in 1977. She received the Dipl. ing, M.Sc. and Ph.D. degrees from the Faculty of Electronic Engineering of University of Niš in 2002, 2008 and 2012, respectively. Her research interests are numerical methods with application to antenna theory, grounding systems, lightning and electrostatic discharge modelling, and financial engineering. As an author or co-author, she has published a number of journal, conference papers, and book chapters treating mentioned problems. As a researcher she has contributed five scientific projects funded by the Ministry of Science and Technological Development of Republic of Serbia, three international Joint German-South-Eastern European Network projects supported by the DAAD foundation, and EUROWEB project in the frame of the Erasmus Mundus programme. In the period of 2003-2004 she has been employed as a research/teaching assistant at the Dept. of Metrology, Faculty of El. Engineering, University of Niš, Serbia, and during 2004-2013 at the Dept. of Theoretical El. Engineering at the same University. During the period 2013-2014 she was a postdoc fellow at Mälardalen University, UKK, Division of Applied Mathematics where she now works as a senior lecturer, head of the division and programme coordinator for BSc in Analytical finance and MSs in Financial Engineering.

Joe Wiart, PhD*LTCl, Telecom ParisTech, France***Management of the variability and uncertainty in electromagnetism and dosimetry using advanced parsimonious stochastic methods**

Abstract: Thanks to the important progress in high performance calculation, numerical simulations have an increasing role in applied electromagnetics and in particular in numerical dosimetry. Numerical methods such as the Finite Difference in Time Domain (the well known FDTD) are more and more used to design system, antennas and assess performances and quantities such human exposure. Despite such increasing progress in high performance calculations, the versatile use of the RF communication devices and the increasing complexity of the networks have created challenges for the usual "deterministic" approaches used for assessment of the human population RF exposure. Statistical methods and meta-modeling can help to overcome these limits. The tutorial will introduce the concepts of the meta-modeling, uncertainty propagation and quantification using advanced statistical methods. The introduction will outline first well-established statistical methods, then advanced parsimonious methods such as Planning Experiment, Polynomial Chaos Expansion, Kriging or Low rank tensors approximation aiming to build meta-model, having a quick computation time, able to be substituted to time consuming calculation methods such

as FDTD. The talk, illustrated with studies performed in dosimetry will explain how manage variability, perform uncertainty quantification and carry out sensitivity analysis.



Biography: Joe Wiart PhD (95), Engineer of Telecommunication (92) is the holder of the Chair C2M (Caractérisation, Modélisation et Maitrise) of the Institut Mines Telecom – Telecom-ParisTech (<http://chairec2m.mines-telecom.fr>). He was previously the head of the dosimetry research unit of Orange (former France Telecom). He is the present chairman of the TC106x of the European Committee for Electrotechnical Standardization (CENELEC) and of International Union of Radio Science (URSI) commission K. He has been the Chairman of the French chapter of URSI and consultant of ICNIRP. He is emeritus member of The Society of Environmental Engineers (SEE) since 2008 and senior member of Institute of Electrical and Electronics Engineers (IEEE) since 2002. He has led several national and European projects dedicated to dosimetry (e.g LEXNET project <http://www.lexnet-project.eu/> 2012-2015). His research interests are RF dosimetry, numerical methods and statistic applied in electromagnetism and dosimetry. His works gave rise to more than 120 publications in journal papers and more than 150 communications (among which of numerous invited communications).

TUTORIAL T7

Saturday, September 15

10:15-11:00 (HVAR)

Khalil El Khamlichi Drissi, PhD

Institut Pascal, CNRS, Clermont Auvergne University, France

Matrix Pencil Method applied to smart metering, electromagnetics and bioelectromagnetics phenomena

Abstract: Tutorial will deal with the Matrix Pencil method, an efficient numerical method to identify deterministic signals based on either simulation or measurement. The method is usually referred to as a high-resolution technique as it is capable to identify non-stationary signals, even in the presence of numerical or experimental noise, respectively. The basis functions are complex exponentials with a damping factor. Those functions are rather appropriate to identify electromagnetic waves or distributed currents with an optimal number of elements. The method is applied either in time, frequency or in space domain providing one to identify the original signal by means of a limited number of singular values, poles and residues. The applications of interest in this tutorial are: Non-Intrusive identification and load monitoring in residential areas, radiated ElectroMagnetic Field by multiconductor Transmission Line system and also UWB radar for communication, localization and/or target identification. The talk will end up presenting our recent application: based on this high-resolution method, reliable, rapid and reproducible, one analyze the activity of peripheral fibers A δ and C transporting nociceptive information from peripheral nervous system. Using electrophysiological recordings such as the electroneurogram (ENG) or electroencephalogram (EEG), the main objective is to extract specific identifiers for migraine pain.



Biography: Khalil El Khamlichi Drissi received the Diploma Engineer, M. Sc., and PhD degrees in Electrical Engineering from Ecole Centrale de Lille and the University of Lille, in 1987 and 1990 respectively. He received the Habilitation in electronics, the highest qualification in France; at the Doctoral School "Sciences Pour l'Ingénieur" of Blaise Pascal University, in 2001. He became Full Professor at the Department of Electrical Engineering where he was the dean in the period from 2007 to 2011. He is also senior researcher at Pascal Institute. Pr. El Khamlichi Drissi is an IEEE member, in Electromagnetic Compatibility and Power Electronics societies. He is also member of EEA and chairman of SEE Auvergne since 2002 (Society of Electricity, Electronics and Information and Communication Technologies), appointed senior member on 2003. Pr. El Khamlichi Drissi became Vice President of Research Valorisation, UBP chancellor board from 2012 to 2016. Currently, he is Vice Regional Delegate of Research and Technology (DRRTA) for The Auvergne-Rhône-Alpes Region. Pr. El Khamlichi Drissi research interests include EMC in Power Electronics and Power Systems, in particular; numerical modeling, EMI reduction and converter control. He authored or coauthored more than 200 scientific papers published in peer-review journals and presented at international conferences and 6 WO patents. He has been chairperson and member of scientific committees at international conferences. He is expert for different French agencies (ANRT, ANR, HCERES, DGRI), for the Croatian Science Foundation and for the Shota Rustaveli National Science Foundation. He is project leader and responsible for several international projects related to EMC (FP7 Marie Curie, Econet, Cogito, Integrafm, Cedre, Toubkal, Tassili, etc...) and a partner within the Brain City Research Institute. He currently has an on-going collaboration with different companies (IFPEN, EDF, France Telecom and Landis+Gyr).

Main research experience:

- Power converter control based on Space Vector Modulation
- Common mode reduction in power converter
- Modeling of full-wave methods for the solution of electromagnetic problems by using Transmission Lines Methods in Frequency Domain and Time Domain
- Automatic Target classification based on radar backscattered UWB signals
- Numerical identification based on Matrix Pencil Method in time domain and in frequency domain.

BUSINESS FORUM

Friday, September 14, 14:30 – 16:00 (BRAČ)

BIG DATA PANEL: IS DATA THE NEW OIL?

Naming the data being the oil of the digital era has two connotations: one to be important and powerful as the oil was in last century and another to be crude which must be refined to be valuable.

More data has been created in the past years than in the entire previous history of humans. Many sources predict exponential data growth toward 2020 and beyond. But the real benefit of data lies in its potential to give an insight into domain to which it relates. In the last decade, that potential has been recognized and expanded to many sectors. According to job site Glassdoor, data scientist has been ranked the best job in America, for the third year in a row. Data analysis impacted many businesses, opened many business and scientific opportunities, and brought economic, environmental, and societal benefits.

To unlock the full potential of multiple data sources, thus the data itself, it is slowly becoming evident that different approaches will be required in the future. This panel will try to give insights on how to approach data collection and analysis from both the scientific and industry perspectives.

PANELISTS:



Univ. Prof. Dr. Bojana Dalbelo Bašić, *Faculty of Electrical Engineering and Computing, University of Zagreb*

PhD in Computer science.

Full professor and the founder of the Text Analysis and Knowledge Engineering Lab at Faculty of Electrical Engineering and Computing in Zagreb.



Assist. Prof. Dr. Tea Žakula, *Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb*

PhD in Building Technology.

Assistant Professor and the head of Laboratory for Energy Efficiency at the Faculty of Mechanical Engineering and Naval Architecture, University of Zagreb.



Assist. Prof. Dr. Ivo Ugrina, *Faculty of Science, University of Split*

PhD in Mathematics.

Assistant professor at Faculty of Science and the CEO at NVTEH and Intellomics companies specialized in data collection and analysis.



M.Sc. Damir Ivanković, *Institute of Oceanography and Fisheries, Split*

PhD student in Electrical Engineering and Information Technology.

Data manager, database developer and head of Institute Data center.

MODERATOR:



Dr. Ivana Nižetić Kosović, *Ericsson Nikola Tesla d.d.*

Researcher at ETK Research

WSEP: SEVENTH WORKSHOP ON SOFTWARE ENGINEERING IN PRACTICE

The software is everywhere around us. The significant growth of ICT products and solutions depends on the quality of the used software. The software is essential enabler of future usage and growth of networked society surrounded with 50 billion of connected devices. Are we ready for such mass software production and keeping the software product life cycle continuous? How are the current researches and used software engineering practice correlated and ready to take responsibility for such broad and demanding software usage with quality, security and energy efficiency demands? What are the software products in the "software-as-a-service" era? Are we aware of software architecture demands and software life-cycle management? What challenges in software engineering are the most critical? Let's take opportunity to discuss these software engineering challenges and exchange experience between researchers and practitioners. Prepare your view and share it with others. Be on the workshop during the SoftCOM 2018 conference.

MODERATOR:

Darko Huljenic, PhD, Ericsson Nikola Tesla d.d., Zagreb



Biography:

Dr. Darko Huljenic received his Ph.D. degrees from the University of Zagreb, Croatia, in 2001. He has been with Ericsson Nikola Tesla since 1984. His current position is Director of Research Unit. He expanded company research cooperation with the major Croatian Universities as well as some international research institution's. His main interests are open network architecture, software development methodologies and service oriented architecture. Dr. Huljenic holds a position of associate professor at the University of Zagreb, in the Faculty of Electrical Engineering and Computing, Telecommunications

Horizontal database scaling in microservice environment

Marko Miljak and Toni Mastelic (Ericsson Nikola Tesla d.d., Croatia)

Autonomous microservice scaling: Kubernetes use case

Nedo Knezovic and Toni Mastelic (Ericsson Nikola Tesla d.d., Croatia)

Discrete Global Grid System in IoT environmental database

Ana Franic, Ivana Nizetic Kosovic

Testing software units using the Google Mock library

Josip Strinic

WORKSHOP ON DOCTORAL STUDIES IN ICT

Moderators: **Maja Matijašević**, University of Zagreb, Faculty of Electrical engineering and computing, **Dinko Begusic**, University of Split, Faculty of electrical engineering, mechanical engineering and naval architecture, **Toni Mastelić**, Ericsson Nikola Tesla

Ognjen Šćekić: Doctorate from the TU Wien, Austria. Distributed Systems Group (dsg.tuwien.ac.at).

Research Areas Social Computing, Collective Adaptive Systems (CAS), Rewarding and Incentives, Cloud Computing, Smart Cities, Distributed Ledger Technologies, Internet of Things, Service- Oriented Computing.

Stefan Nastić: Doctorate from the TU Wien, Austria. Distributed Systems Group (dsg.tuwien.ac.at).

Research Areas Developing, provisioning and governing IoT/Edge Cloud systems, Internet-of-Things (IoT) / Edge Computing / Cyber-Physical Systems (CPS), Big Data Analytics, Software-Defined systems, Cloud Computing.

Toni Perković: Doctorate from the University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Research Areas: Usability, design, and analysis of security protocols for wireless networks, Design of secure authentication protocols.

WORKSHOP ON INNOVATION IN ICT

7 must have Innovation Skills

The workshop will enable attendees to identify and reflect on their existing innovation power and identify their current "Innovation Gap" for continuous development. It will take them on a personal journey of reflection via seven essential innovation skills and insights that a creative person MUST nurture - to be "future ready" for any industry. Based on a plethora of real life contemporary references (Multi-media etc..) and potpourri blend of real life experiences (from historical truths to modern industry leaders). The students will get an interesting and fun chance to do a self-check of their current "Innovation future readiness" via a quick innovation gap activity and handout (take-away).

Speaker and workshop facilitator: Marko Bervanakis, Ericsson Nikola Tesla d.d., Zagreb



Marko Bervanakis (B. Electrical/Electronic Eng., Dipl. Education. VUT & Melb. University, Aus.) is currently based in Croatia within ERICSSON Nikola Tesla d.d. Croatia. In the past - he has also worked in other Global Telecoms companies (i.e. both within the EU & in Australia) in various R&D environments, Engineering Customer Support Services, as a technical trainer-educator and innovation coach/manager. Along the way, he has also worked as a Science & Mathematics teacher in both primary & secondary schools. In turn, he is currently the global Ericsson Innovation Awards Mentor lead and often facilitates innovative workshops for Ericsson's global customer base.

Friday, September 14, 14:30 – 16:00 (LASTOVO)

BUSINESS FORUM PRESENTATION

The programme of promoting the development of broadband internet in the County of Split-Dalmatia

Abstract: The development digital networks called Next Generation Networks is supported by the Operation Programme Competitiveness and Cohesion of the European Commission through two programs: National program of development of access networks in rural areas, and NP – BBI national programme of the broadband Internet for the development of aggregation networks. For the County of Split- Dalmatia the Project of development of access networks is particularly important. The County of Split-Dalmatia has four areas of rural interest in access networks: City of Kaštela, inland Kaštela and coastal line; Islands area of Brač, Hvar, Vis, Šolta; Sinj- Trilj area with municipality of Muć, Dugopolje and Klis; Imotski – Vrgorac area . In all four areas we have municipality or city project holders. The project aim with EFRD fund's is to encourage commercial telecom operators, to invest into areas where they have not previous commercial interest. Conceptual project was provided by Profuturus company from Maribor in three of areas. The company Kabel-optika from Zagreb prepared the conceptual project in the last area of Imotski- Vrgorac. Ministry of the European funds has the coordination role of Project since 2017. Technical project is managed by the HAKOM agency.



Speaker: Doni Garmaz, Split – Dalmatia County

Doni Garmaz graduated at the Faculty of Electrical Engineering and Computing, the University of Zagreb, with specialization in Radio Communications and Professional Electronics, in December 1999. He worked for several companies, the latest was Ericsson Nikola Tesla, Services Ltd. His main interests were in the field of VoIP development and digital networks. He worked as Antenna System Maintenance and Verification Manager also responsible for the installation, maintenance and verification of the digital signal transmission to the end user. He increased his knowledge and skills through the continuing education and he acquired international certificates in Munich (Nokia) and Zagreb (Siemens).

WESC: ERICSSON NIKOLA TESLA SUMMER CAMP 2018 WORKSHOP

Ericsson Nikola Tesla Summer Camp is a summer workshop for senior students from Croatian and universities from the region. The first Summer Camp was organized back in 2001 and since then more than 600 students participated. Students work five weeks on real problems in real industrial environment with mentors both from the company and universities.

MODERATORS:



Toni Mastelić, PhD, Researcher and Innovation coach

Ericsson Nikola Tesla d.d., Split

Toni Mastelic (male) received his Ph.D. degrees from Vienna University of Technology, Austria, in 2015. He is a researcher at Ericsson Nikola Tesla d.d., Research department. He did his bachelor and masters studies in Computer Science at the University of Split, FESB, Croatia, where he received his Bachelor degree in 2009, and Master degree in 2011. Afterwards, he worked as a research and later on as university assistant at Vienna University of Technology, where he pursued his PhD. Finally, he received his PhD degree in 2015 at the Institute of Software Technology and Interactive Systems, Vienna University of Technology.



Ivana Nižetić Kosović, Researcher

Ericsson Nikola Tesla d.d., Split

Ivana Nižetić Kosović obtained her diploma in mathematics at Faculty of Science in Zagreb and completed her PhD at Faculty of Electrical Engineering and Computing, where she was working as an assistant professor. Her scientific interests include spatio-temporal reasoning, artificial intelligence and heterogenous data analysis. She is a researcher and a team leader of Ericsson Garage project on environmental data analysis in ETK Research, Split.

Brain–computer interface for Human Computer Interaction

Mentor(s): Luka Kraljević, Mladen Russo

Team members: Tomas Pinjušić, Antonia Gotovac, Duje Žaja

One Click modification of SIP basic call with “import” function

Mentor(s): Nikša Marinković, Jakov Kristian Krstulović

Team members: Ivana Vodopija, Nikolina Badrov

HDS Cabling tool

Mentor(s): Aleksa Pijetlović, Ivan Kalaica

Team members: Karlo Topić, Agata Mihaljević

Remote sensing for environmental monitoring

Mentor(s): Toni Mastelić, Ivana Nižetić Kosović

Team members: Kristina Sučić, Lucija Visković, Matea Boban

JCAT as Exploratory Testing Framework ENABLER

Mentor(s): Zoran Mihajlović

Team members: Luka Cvitanović, Marin Vladimir

Soft sensors for environmental monitoring

Mentor(s): Ivana Nižetić Kosović, Toni Mastelić

Team members: Katarina Anđela Vrgoč, Vinka Mimica

JIRA & machine learning

Mentor(s): Rade Stanković, Michael West

Team members: Marko Čaleta, Tomislav Baričević

Visualization of Cause Code mapping

Mentor(s): Mate Divić

Team members: Ante Banovac, Domagoj Puljić

Thursday, September 13, 11:30 – 13:00 (HVAR)

HOW POWER EFFICIENCY IS TAILORING NOKIA'S TECHNOLOGY

Power efficiency and green technologies are becoming more important in design of new technology products. Over the years Nokia had invested a lot in optimizing power and building efficiency of Radio equipment. We in Nokia are now turning to the other parts of the of the Infrastructure, Data Centers and Networks to demonstrate the same principles and ensure same innovation paths in ICT industry.

SPEAKER:



Vedran Ivaniš

Nokia Networks, Croatia

Vedran Ivaniš is experienced Account Manager in Nokia Solution Networks, supporting new and exciting cross technology solutions for Telecommunication Companies and Enterprises. Initially started as telecommunications expert in Sono and Siemens, but, in past fifteen years, managed to collect wide technology knowledge through innovative ICT Projects in Hewlett Packard, Huawei, Microsoft and Asseco. t current role, in Nokia, he is motivating Customers for digital transformation projects and initiatives based on newly available technologies and products.

GENERAL INFORMATION



SPLIT – SUPETAR (Island of Brač)

VENUE

The 26th International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2018) will be held in Split – Supetar (Island of Brač).

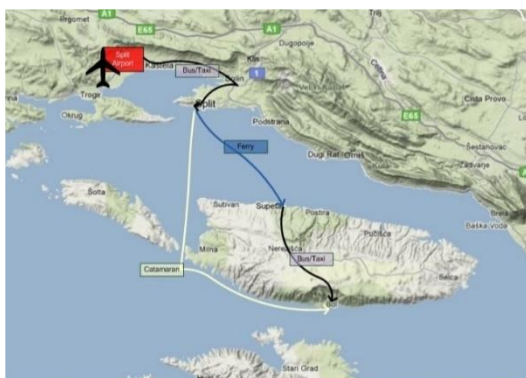
Split is the largest city on the Croatian coast of the Adriatic Sea with a population of 180.000. The visit of Split can offer the travellers an extraordinary city tour without any need to take buses to reach the centre. Even today as you pass along the south promenade of the Palace, you can feel Diocle's spirit. You can also feel the light breeze blowing from the sea as it seems to be playing through the openings of the Cryptoporticus, welcoming to this town, travellers for whom as Diocles said, there will always be a bed, food, drink, music and the presence of God.

Supetar (San Pietro della Brazza in Italian) is a town and a city on the northern side of the Dalmatian island of Brač, in the Split-Dalmatia County, in Croatia. It became the island's official centre in 1827. The City of Supetar includes the town Supetar and the three villages Splitska, Škrip and Mirca. With a population of 3,326, it is the island's largest town.

TRAVELING TO SPLIT

Split can be reached by air: directly from Amsterdam, Brussels, Frankfurt, London, Lyon, Manchester, Munich, Paris, Vienna and via Zagreb from all world airports (for more information please visit Airport Split-Kastela); by ship: Split harbor is daily connected with Ancona. Ship connections are also available with Venice, Pescara and Bari.

TRAVELING TO BRAČ FROM SPLIT



WEATHER

In September the weather in Split is very nice, with an average temperature of about 20 degrees Celsius and the sea temperature is agreeable for swimming. Climate of Brač is characterized by long, hot and dry summer. Average air temperatures in Supetar, Brač island in September is 21,4 degrees Celsius, as well as the average sea temperature. The influence of the sea on temperature is stable, making the swimming here popular long in September. Although winds are usually not as strong during the summer, there is daily circulation of air in form of refreshing "maestral" from the sea (NW) from afternoon to evening, and evening "burin" (NE) pleasant breeze from hills of Brač.

PROCEEDINGS

All participants will receive the Final Program and USB Proceedings when registering at the conference desk.

LANGUAGE

The Conference language is English.

REGISTRATION

Thursday, September 13: 08:30 – 16:00
Friday, September 14: 08:30 – 11:00, 14:30 – 17:00
Saturday, September 15: 08:30 – 10:30

SECRETARY

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