

CSNDSP2026

[Conference](#) »Program

## 2026 15th International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP) Program

Wednesday, July 15

Wednesday, July 15 8:45 - 9:10

### Opening Session

Room: Pentland

Wednesday, July 15 9:10 - 10:00

### Plenary Talk 01: Prof. Muhammad Imran, "Towards 6G: Advances in Wireless Communications and Signal Processing"

Room: Pentland

Wednesday, July 15 10:00 - 11:00

### Coll1-01: Free Space Optics

Room: Prestonfield

#### ***Measurement of the Turbulent Channel Superoperator Acting on Single-Photon Polarization States Employing Quantum Process Tomography***

Carlos Guerra-Yáñez (Czech Technical University, Czech Republic); Tomáš Novák (Czech Technical University in Prague, Czech Republic); Dong Nhat Nguyen (TNO, The Netherlands); Zabih Ghassemloo (Northumbria University, United Kingdom (Great Britain)); Josef Vojtech (CESNET, a.i.o., Czech Republic); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic)

#### ***Quantum Key Distribution over Free Space Optical Satellite Links in the 6G Era***

Vasilis K. Papanikolaou (Friedrich-Alexander-University Erlangen-Nuremberg, Germany); [Alexis Alfredo Dowhuszko](#) (Aalto University, Finland); Mate Galambos (Budapest University of Technology and Economics, Hungary); Carlos Guerra-Yáñez (Czech Technical University, Czech Republic); Henrique M Salgado (University of Porto & INESC Porto, Portugal); Goran T Đorđević (University of Nis, Serbia); Philipp Kleinpaß (German Aerospace Center (DLR), Germany); Niek Doelman (TNO High-Tech Industry, The Netherlands)

#### ***Flat-Earth Model Accuracy for Turbulence Effects in Optical Space-Ground Links***

[Agustin E Gonzalez Uriarte](#) (Ecole Centrale Méditerranée, France & FCFM, Chile); Ali Khalighi (Ecole Centrale Méditerranée, France); Nicolas Perlot (Fraunhofer Heinrich-Hertz Institute, Germany)

#### ***Robustness of Quantum Trellis-Coded Modulation for Intra-Satellite Communications Under Radiation and Burst Noise***

Sebastián Seguel and Ismael Soto (University of Santiago, Chile); Arun Majumdar (San Diego Consulting, USA)

***Secret-Key Generation Scheme Controlled by Atmospheric Turbulence, Background Radiation, and Pointing Error***

Ivan B. Djordjevic (Florida State University, USA); Goran T Đorđević (University of Nis, Serbia)

**Wednesday, July 15 10:00 - 11:00**

**GT-01: DSP for Biomedical applications**

Room: Pentland East

***Real-Time Visual Fatigue Monitoring System via Facial Landmark Analysis and Blink Rate Tracking***

Lídices Reyes-Hung (University of Santiago of Chile & Centre for Multidisciplinary Research in Telecommunication Technologies, Chile); Benjamin San-Martin (Universidad de Santiago de Chile, Chile); Ismael Soto (University of Santiago, Chile)

***Accelerometric Data Functional Decomposition for Motion Symmetry Evaluation***

Ales Prochazka (Univ Chem & Technol Prague, Czech Republic); Tereza Tumová (University of Chemistry and Technology, Czech Republic); Irena Šindelářová (Czech Technical University, Czech Republic); Hana Charvatova (UTB Zlin, Czech Republic); Oldrich Vysata (Faculty Hospital Hradec Kralove, Czech Republic); Vladimír Mařík (Czech Technical University, Czech Republic)

***Early Diagnosis of Neurodegenerative Diseases Using Video-Oculography***

Batuhan Yilmaz (Galatasaray University, Turkey); Lejla Koric (Institut of Neuroscience Timone, Marseille, France); Mouloud Adel (Universite Aix-Marseille, France)

***Learning Entropy with ICA Preprocessing for Assessment of Postural Instability in Stroke: A Pilot Study***

Oldrich Vysata (Faculty Hospital Hradec Kralove, Czech Republic); Libuše Smetanová, Berenika Lenta Guðbjartsdóttir and David Matyáš (University Hospital in Hradec Králové, Czech Republic); Hasan Dizman (Istanbul Arel University, Turkey); Ales Prochazka (Univ Chem & Technol Prague, Czech Republic)

***CT Windowing and Explainability in Detection of Pulmonary Embolism from CTPA***

Deep Ashish Jariwala and Kshirasagar Naik (University of Waterloo, Canada)

**Wednesday, July 15 10:00 - 11:00**

**SS01-01: Integrated Sensing and Communications for 6G**

Room: Pentland West

***Periodogram Characterization for Blind Cyclostationary Analysis of LFM-ISAC Waveforms***

Shreesh Mohalik and Ahmet Burak Ozyurt (University of Edinburgh, United Kingdom (Great Britain)); John Thompson (University of Edinburgh & Univ of Edinburgh, United Kingdom (Great Britain))

***Ultra-Fast Device-Free Visible Light Sensing and Localization via Reflection-Based  $\Delta$ RSS and Deep Learning***

Helena Serpi (Department of Materials Science, University of Patras, Greece); Tanya Politi (University of Patras, Greece)

***A Deployment-Oriented Perspective on Terahertz 6G Systems Within 6G-TERAFIT***

Christos Tselios, Vassilis Tsakanikas, Georgios Alogdianakis, Angelos Smyrilios and Theodoros Skandamis (University of Peloponnese, Greece); Hemalatha Vulchi (Universidad Carlos III de Madrid, Spain & IT - Instituto de Telecomunicações, Aveiro, Portugal); Issa Elfergani and Jonathan Rodriguez (Instituto de Telecomunicações, Portugal); Raed A Abd-Alhameed (University of Bradford, United Kingdom (Great Britain)); Christos P. Antonopoulos (University of Peloponnese, Greece); Nikolaos Voros (University of Peloponnese, Greece)

***An RSSI Dataset Leveraging Machine Learning Based LoS/NLoS Classification and ISAC Paradigm Towards Obstacle Detection***

Theodoros Skandamis, Konstantinos Antonopoulos, Panagiotis Barelakos, Panagiotis Efstathiou and Christos P. Antonopoulos (University of Peloponnese, Greece); Nikolaos Voros (University of Peloponnese, Greece)

***Low-Complexity Optical Synchronization for ISAC Networks Leveraging Delta-Sigma Modulation***

Ebrahim Darabi (Universidade de Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Bruno Tavares Brandão (Instituto de Telecomunicações, Portugal & Universidade de Aveiro, Portugal); Beatriz Oliveira (Instituto de Telecomunicações & Universidade de Aveiro, Portugal); Fernando Guiomar (Instituto de Telecomunicações, Portugal); Paulo P Monteiro (Universidade de Aveiro & Instituto de Telecomunicações, Portugal)

**Wednesday, July 15 11:30 - 12:30**

**Coll2-01: Optical Fiber Devices and Sensing applications**

Room: Prestonfield

***A U-Shaped Coreless Fibre Architecture for High Sensitivity Immunosensing of Staphylococcus Aureus***

Adeel Faruq and Haili Ma (Northumbria University, United Kingdom (Great Britain)); Stephen Todryk (School of Geography and Natural Sciences, United Kingdom (Great Britain)); Edward Fox (School of Geography and Natural Sciences Northumbria University, United Kingdom (Great Britain)); Hanna Bawab (School of DACI Northumbria University, United Kingdom (Great Britain)); Antony Antoniou (School of Geography and Natural Sciences Northumbria University, United Kingdom (Great Britain)); Yingchao Liu, Richard Fu and Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Yuliya Semenova (Technological University Dublin, Ireland); Qiang Wu (Northumbria University, United Kingdom (Great Britain))

***Marker-Based Alignment for a Plastic Optical Fibre-Based Visible Light Communication Link in Robotics***

Natalia Hernandez-Yanez (Universidad de Santiago de Chile, Chile); Raul Zamorano-Illanes (Northumbria University, United Kingdom (Great Britain)); Cristóbal Carreño (Université de Lorraine, France); Qiang Wu (Northumbria University, United Kingdom (Great Britain)); Nicolas Krommenacker (Université de Lorraine, France); Ismael Soto (University of Santiago, Chile); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain))

***Cascaded FBG Ultra-High Sensitivity Temperature Sensor Based on Envelope-Free Vernier Technology***

Haili Ma (Northumbria University, United Kingdom (Great Britain)); Cong Shi, Wenxi Yang, Yulun Zhang and Yicun Yao (Liaocheng University, China); Meng Zhang (Northumbria University, United Kingdom (Great Britain)); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Jinhui Yuan (University of Science & Technology Beijing, China); Richard Fu (Northumbria University, United Kingdom (Great Britain)); Zhen Tian and Liqiang Zhang (Liaocheng University, China); Yiming Shen (Technological University Dublin, Ireland & Eblana Photonics, Ireland); Minghong Wang (Liaocheng University, China); Qiang Wu (Northumbria University, United Kingdom (Great Britain))

***An Optical Sensing Algorithm for Silicon Carbide Epitaxial Layer Thickness Based on Multi-Beam Interference Correction***

Chenlu Hou (North China University of Water Resources and Electric Power, China)

***3D-Printed Light Coupling Microlens for Photonic Integrated Circuits***

Wenlei Chen, Liu Dejun, Chenyang Su, Changwen Xu, Huang Ziyi, Longhui Huang, Yiping Wang and Changrui Liao (Shenzhen University, China)

## Wednesday, July 15 11:30 - 12:30

### SS01-02: Integrated Sensing and Communications for 6G

Room: Pentland West

***QDRL Based RIS Assisted Optical Beamforming for Interference Mitigation in Dense Urban 6G LEO NTN Systems***

Haymanot Derebe Bizuneh (Adama Science and Technology University, Ethiopia); Ram Sewak Singh (Galgotias University, India); Demissie Jobir Gelmecha and Bayisa Taye Mulatu (Adama Science and Technology University, Ethiopia)

***SEG-JPEG: Simple Visual Semantic Communications for Remote Operation of Automated Vehicles over Unreliable Wireless Networks***

Sebastian Donnelly (Oxford Brookes University, United Kingdom (Great Britain)); Ruth Anderson (Oxfordshire County Council, United Kingdom (Great Britain)); George Economides (UK Government, United Kingdom (Great Britain)); James Broughton, Peter Ball, Alexander Rast and Andrew Bradley (Oxford Brookes University, United Kingdom (Great Britain))

***Toward Robust ISAC Beam Tracking: Experimental OFDM-Enhanced Monopulse AoA Estimation with Reduced Tracking Variability***

Georgios Alogdianakis, Christos Tselios and Angelos Smyrilios (University of Peloponnese, Greece); Nikolaos Voros (University of Peloponnese, Greece); Christos P. Antonopoulos (University of Peloponnese, Greece)

***Integrated Sensing and Communication Limits over Optical Wireless Channels***

Mohammadamin Baniyasi (The University of Edinburgh, United Kingdom (Great Britain)); Juncheng Li (University of Edinburgh, United Kingdom (Great Britain)); Muhammad Nafees (The University of Edinburgh, United Kingdom (Great Britain)); John Thompson (University of Edinburgh & Univ of Edinburgh, United Kingdom (Great Britain)); Majid Safari (University of Edinburgh, United Kingdom (Great Britain))

***Secure FMCW-Based ISAC Transmission***

Murat Temiz, Colin Horne, Matthew Ritchie and Christos Masouros (University College London, United Kingdom (Great Britain))

**Wednesday, July 15 11:30 - 12:30**

## **SS07-01: Camera-Based Optical Wireless Communication Systems**

Room: Pentland East

### ***Fabric as Optical Diffuser for Wearable LEDs in Optical Camera Communications Systems***

Eleni Niarchou (Universidad de Las Palmas de Gran Canaria, Spain); Vicente Matus (IDeTIC-ULPGC, Spain); Victor Guerra (Wooptix, Spain); Jose Rabadan (IDeTIC-ULPGC, Spain); Rafael Perez (Universidad de Las Palmas de Gran Canaria, Spain)

### ***Beacon Identification Using Noise Spectra in Optical Camera Communication***

Miguel Rêgo (University of Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Alexis Alfredo Dowhuszko (Aalto University, Finland); Luis Nero Alves (DETI, Universidade of Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Pedro Fonseca (University of Aveiro, Portugal & Instituto de Telecomunicações, Portugal)

### ***Global-Shutter Pulse Amplitude Modulation for Optical Camera Communications in Intra-Satellite Links***

Jaime Aranda Cubillo (Universidad de Las Palmas de Gran Canaria, Spain); Vicente Matus (IDeTIC-ULPGC, Spain); Jose Rabadan (ULPGC, Spain); Rafael Perez-Jimenez (IDeTIC, Las Palmas University of Technology, Spain)

### ***Comparative Analysis of PWM and FM-Based Modulation Techniques for Sensor Data Transmission in Optical Camera Communications***

Jorge Neto (Universidade de Aveiro, Portugal); Miguel Rêgo (University of Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Atiya Fatima Usmani (University of Aveiro, Portugal); Ernesto Ventura (Universidade de Aveiro, Portugal); Luis Nero Alves (DETI, Universidade of Aveiro, Portugal & Instituto de Telecomunicações, Portugal)

**Wednesday, July 15 2:00 - 2:50**

## **Plenary Talk 2: Prof. Ana I. Perez Neira. "Airborne Computation: The Next Leap for Wireless Networks and AI"**

Room: Pentland

**Wednesday, July 15 2:50 - 4:00**

## **GT-02: Radar Technology**

Room: Pentland East

### ***24 GHz mmWave Radar Certification Standard Pre-Screening***

Jorik De Bruycker and Gilles Verschueren (KU Leuven, Belgium); Uwe Maaß (Fraunhofer IZM, Germany); Tim Claeys and Nobby Stevens (KU Leuven, Belgium)

***On the Added Value of mmWave Radar Within Indoor Logistic Environments***

Gilles Verschuere, Jorik De Bruycker and Nobby Stevens (KU Leuven Science, Engineering and Technology Group, Gent, Belgium); Marc Juwet (KU Leuven Science, Engineering and Technology Group, Belgium)

***The Semantic Proximity Trap: Investigating Contrastive Learning for Open Set Radar Activity Recognition***

Reda El Hail (KU Leuven, Belgium); Quinten Van Baelen (Ku Leuven, Belgium); Anton Lambrecht (IDLab, Ghent University-Imec, Belgium); Eli De Poorter (Ghent University & Imec, Belgium); Peter Karsmakers (KU Leuven, Belgium)

***A Real-Time Embedded mmWave Radar System for Contactless Tremor Assessment***

Haoxuan Li and Tiantao Jiang (Heriot-Watt University, United Kingdom (Great Britain)); Rui Fan (First Affiliated Hospital of Chongqing Medical University, China); Liang Chen (Zhongshan Hospital of Wuhan University, China); Anne Bernassau (Heriot-Watt University, United Kingdom (Great Britain)); Kevin Chetty (University College London, United Kingdom (Great Britain)); Wenda Li (Heriot Watt University, United Kingdom (Great Britain))

***Synthetic Aperture Based Moving Targets Localization Using Mobile OTFS Radar***

Ali T. Göktaş and Mikko Valkama (Tampere University, Finland); Bo Tan (University College London (UCL), United Kingdom (Great Britain))

***A Wing-Borne MIMO Radar***

Aleksandr Kharin and Sergey Karamov (Novus Converged Aerospace Ltd., United Kingdom (Great Britain))

## Wednesday, July 15 2:50 - 3:10

### Invited talk: Prof. Rafael Perez-Jimenez "First Transatlantic Telecommunication Cable: the Victorian "Apollo" Project"

Room: Prestonfield

## Wednesday, July 15 2:50 - 4:00

### SS08: Towards 6G-Advanced Technologies for Future Ubiquitous Communications

Room: Pentland West

***A Conditional Variational Framework for Channel Prediction in High-Mobility 6G OTFS Networks***

Mohsen Kazemian and Jürgen Jasperneite (Technische Hochschule Ostwestfalen-Lippe, Germany)

***Curriculum Self-Supervised Learning for BD-RIS Optimization in Multi-User MIMO Systems***

Darian Pérez-Adán (Universidade da Coruña, Spain); Dariel Pereira-Ruisanchez and Óscar Fresnedo (University of A Coruña, Spain); Ignacio Santamaria (University of Cantabria, Spain); Luis Castedo (University of A Coruña, Spain); John Thompson (University of Edinburgh & Univ of Edinburgh, United Kingdom (Great Britain))

***Robust Channel Estimation in OTFS Systems Using Embedded Pilots and DFT-Based Interpolation***

Andres Reyes-Castro and Lianet Mendez-Monsanto (Universidad Carlos III de Madrid, Spain); Maria Julia Fernandez-Getino Garcia (University Carlos III of Madrid, Spain); Ana Garcia Armada

(Universidad Carlos III de Madrid, Spain); Kun Chen-Hu (Universidad de Alcalá, Spain & Universidad Carlos III de Madrid, Spain)

### **Analyzing 5G Sidelink for Emergency Braking Applications**

Jesús Suárez Montoro (Universidad Carlos III de Madrid, Spain); Víctor P. Gil Jiménez (University Carlos III of Madrid, Spain); Vladimir K. Poulkov (Technical University of Sofia, Bulgaria); Maria Julia Fernandez-Getino Garcia (University Carlos III of Madrid, Spain)

### **Group-Regularized Atomic Norm Minimization for Widely Separated MIMO Radar**

Rafael Santos and Daniel Castanheira (University of Aveiro, Portugal); Adão Silva (Instituto de Telecomunicações, Portugal); Atílio Gameiro (Instituto de Telecomunicações / Universidade de Aveiro, Portugal)

### **3D Indoor Positioning Techniques for mmWave Distributed MIMO Systems Under Multipath Propagation**

Mohd Adnan (University of Aveiro, Portugal); Adão Silva (Instituto de Telecomunicações, Portugal); Rui Dinis (Universidade Nova de Lisboa & Nova IT, FCT-UNL, Portugal); Lukasz Krzymien (Nokia Solutions and Networks, Poland)

## Wednesday, July 15 3:10 - 4:00

### Coll1-02: Optical Wireless positioning/ localisation

Room: Prestonfield

#### **Passive Retroreflector-Based Optical Multilateration for Three-Dimensional UAV Localization**

Khadijeh Ali Mahmoodi (Gustave Eiffel University, France & Schiller International University, France); Bastien Béchadergue and Luc Chassagne (University of Versailles Saint-Quentin-en-Yvelines, France); Mohammed Elamassie (Ozyegin University, Turkey)

#### **Visible Light-Based Joint Position and Orientation Estimations Using Photodiode Array and Artificial Neural Network**

Juan A Apolo (UPV Universitat Politècnica de València, Spain); Beatriz Ortega (ITEAM Research Institute, Spain); Vicenc Almenar (Universidad Politecnica De Valencia, Spain); Sujana Rajbhandari (University of Strathclyde, United Kingdom (Great Britain))

#### **Ontology-Driven Social Digital Twins with OCC Localisation for Real-Time Customer-Service Operations**

Moises Segura-Cedres and Desiree Manzano-Farray (ULPGC, Spain); Eleni Niarchou (Universidad de Las Palmas de Gran Canaria, Spain); Carmen Lidia Aguiar (IDeTIC-ULPGC, Spain); Rafael Perez-Jimenez (IDeTIC, Las Palmas University of Technology, Spain)

## Wednesday, July 15 4:30 - 5:30

### Coll1-03:OWC system design and implementation

Room: Prestonfield

#### **CMOS Design of an Homodyne Receiver for Multi-Band Carrierless Amplitude and Phase Signals**

Carlos Silva (Universidade de Aveiro, Portugal); Luis Rodrigues (Institute of Telecommunications of Aveiro, Portugal & Universidade de Aveiro, Portugal); José Luís Vieira Cura (University of Aveiro,

Portugal); Luis Nero Alves (DETI, Universidade of Aveiro, Portugal & Instituto de Telecomunicações, Portugal)

***Side-Emitting Fiber Coil Receiver for Wide Field-of-View Optical Wireless Communication***

Matej Komanec (Czech Technical University in Prague, Czech Republic); Jakub Formánek (Czech Technical University of Prague, Czech Republic); Carlos Guerra-Yáñez (Czech Technical University, Czech Republic)

***Flexible Organic Photovoltaic Cell Receiver Models in Optical Wireless Channel Simulations***

Mahdi Dor Emami (Université de Poitiers, France & CNRS, XLIM, Poitiers, France); Lilian Aveneau (University of Poitiers, France & Laboratoire XLIM, CNRS, France); Pierre Combeau (Université de Poitiers, CNRS, XLIM, Poitiers, France); Hervé Boeglen (University of Poitiers XLIM CNRS 7252, France); Stéphanie Sahuguède (XLIM UMR CNRS 7252 - University of Limoges, France); Anne Julien-Vergonjanne (University of Limoges & XLIM CNRS 7252, France)

***Highly Insulating Optocoupler for 5 Gbps Full-Duplex Data Transmission***

Kai Schmieder (Fraunhofer Institute for Photonic Microsystems IPMS, Germany); Tobias Schneider (Fraunhofer Institute for Photonic Microsystems, Germany); René Kirrbach (Fraunhofer IPMS, Germany); Jens Knobbe (Fraunhofer Institut für Photonische Mikrosysteme, Germany); Max Haymann-Pohl and Lorenz Reuschel (Fraunhofer IPMS, Germany)

***Innovative Small-Scale PV Modeling: Optimizing the Single-Diode Approach for Sub-Watt Systems***

Matthew B Brown, Wai Pang Ng, Arash Bahrami and Jing Jiang (Northumbria University, United Kingdom (Great Britain)); Matthew Townson (Northumbria University, Great Britain, United Kingdom (Great Britain))

***Microcontroller-Based UOWC Modem: A Pathway to a Low-Cost, Real-Time Underwater Optical Wireless Connectivity***

Egecan Guler (The University of Edinburgh, United Kingdom (Great Britain)); Wasiu O. Popoola (University of Edinburgh, United Kingdom (Great Britain))

**Wednesday, July 15 4:30 - 5:30**

**GT-03: Signal processing**

Room: Pentland East

***A Low-Component-Count E5CHB-Based Integrated Energy Source Converter***

Prabir Ranjan Kasari (National Institute of Technology Agartala, India); Subhadeep Bhattacharjee (National Institute of Technology, Agartala, Tripura, India); Bikram Das and Abanishwar Chakrabarti (NIT AGARTALA, India)

***Explainable AI Based Feature Selection Method for Energy Harvesting Assisted IoT Network***

Huijun Tang (Durham University, United Kingdom (Great Britain)); Wang Zeng (Hangzhou Dianzi University, China); Min Xue (Heidelberg University, Germany); Junhui Du (Tianjin University, China); Zhizhou He (University of Surrey, United Kingdom (Great Britain)); Pengfei Jiao (Hangzhou Dianzi University, China); Huaming Wu (Tianjin University, China); Hongjian Sun (Durham University, United Kingdom (Great Britain))

***Energy-Aware and Flexible Optical Data Stream Processing: A Study of the Averaging Operator in Free Space***

Wenfei Huang, Meike Hofmann and Peter Amthor (Technische Universität Ilmenau, Germany); Boris Koldehofe (University of Marburg, Germany)

***Frequency Nonlinearity Compensation of FM LIDAR System Using Hilbert Transform and Interpolation Resampling***

Lingjuan Zhang (Beijing University of Posts and telecommunications, China); Jinhui Yuan (University of Science & Technology Beijing, China); Kuiru Wang and Binbin Yan (Beijing University of Post and Telecommunication, China); Xinzhu Sang (Beijing University of Posts and Telecommunications, China); Qiang Wu (Northumbria University, United Kingdom (Great Britain))

***Zero-Shot Distracted Driver Detection via Vision Language Models with Double Decoupling***

Takamichi Miyata (Chiba Institute of Technology, Japan); Sumiko Miyata (Institute of Science Tokyo, Japan); Andrew Morris (Loughborough University, United Kingdom (Great Britain))

## Wednesday, July 15 4:30 - 5:30

### SS05-01: Optical and Wireless Sensor Networks for 6G

Room: Pentland West

***Pyenlight: A Library for Modeling Communication and Energy Harvesting of Hybrid Optical Wireless / Radio-Frequency Indoor Networks***

Alexandros Aslanidis (Harokopio University of Athens, Greece); Christos Giachoudis (Ecole Centrale Méditerranée, France); Thomas Kamalakis (Harokopio University of Athens, Greece)

***Digital Twin Orchestrated Software Defined Networks for Handling Denial of Service Attacks in IoT Applications***

Satish Kumar Modalavalasa (Czech Technical University in Prague, Czech Republic); Carlos Guerra-Yáñez and Shivani Rajendra Teli (Czech Technical University, Czech Republic); Luis Miguel Giraldo and Joaquin Perez (Universitat de Valencia, Spain); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic)

***Integrated Sensing and Communications Using a Plastic Optical Fibre on a Robotic Arm***

Raul Zamorano-Illanes and Haili Ma (Northumbria University, United Kingdom (Great Britain)); Klara Eollos-Jarosikova (Czech Technical University in Prague, Czech Republic); Qiang Wu (Northumbria University, United Kingdom (Great Britain)); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Natalia Hernandez-Yanez (Universidad de Santiago de Chile, Chile); Ismael Soto (University of Santiago, Chile)

***Analysis of Positioning Performance Degradation Under Receiver Model Mismatch in PV-Based VLP***

Julian Solis, Raul Zamorano-Illanes, Zabih Ghassemlooy and Qiang Wu (Northumbria University, United Kingdom (Great Britain)); Xicong Li (University of Glasgow, United Kingdom (Great Britain)); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic); Hoa Le Minh (Northumbria University, United Kingdom (Great Britain))

***1 Gbit/s LiFi over Powerline Using VCSEL Arrays***

Atiyeh Pouralizadeh (Fraunhofer Heinrich Hertz Institute & Technische Universität Berlin, Germany); Malte Hinrichs (Fraunhofer Heinrich Hertz Institute, Germany); Dennis Goodson (Fraunhofer Institute for Telecommunications Heinrich Hertz Institute, Germany); Lennert Bober and Christoph Kottke (Fraunhofer Heinrich Hertz Institute, Germany); Ronald Freund (Fraunhofer HHI, Germany); Volker Jungnickel (Fraunhofer Heinrich Hertz Institute & Technische Universität Berlin, Germany); Andrea M Tonello (University of Klagenfurt, Austria)

Thursday, July 16

Thursday, July 16 9:10 - 10:00

## Plenary talk 3: Prof. Martin Dawson "Micro-LEDs for optical wireless communication and digital lighting"

Room: Pentland

Thursday, July 16 10:00 - 11:00

## SS03-01: Teletraffic Models, Traffic Engineering and Network Optimization

Room: Pentland East

### ***On Cell-Size Distributions in Poisson-Voronoi Tessellations and Resource-Sharing Fractions in Cellular Networks***

Yusuke Miyamori, Koki Takahashi, Guanzhou Chen and Shigeo Shioda (Chiba University, Japan)

### ***MDT-Based Automated Antenna Tilt and Cell Overlap Optimization in Live LTE/5G Networks***

Armen Ayvazyan (Ucom, Armenia); Lilia Husikyan (National Polytechnic University of Armenia, Armenia); Narek Velitsyan (Yerevan State University, Armenia)

### ***Average Sojourn Time of Bundle Considering SDA Behavior in DTN***

Fumika Matsuo, Sumiko Miyata and Katsunori Yamaoka (Institute of Science Tokyo, Japan)

### ***Intersymbol Interference-Free Nyquist Pulse Shaping Using Quadratic Bézier Curves***

Dimitrios Tyrovolas (University of Patras, Greece); Shayan Majumder (Heriot-Watt University, United Kingdom (Great Britain) & LibreCube, Germany); Spyridon Nektarios Daskalakis (Heriot-Watt University, United Kingdom (Great Britain)); George K. Karagiannidis (Aristotle University of Thessaloniki, Greece); Stylianos D. Asimonis (University of Patras, Greece)

### ***On Blocking Probabilities in an Erlang Loss System with Server Failures and a Single Repair Facility***

Konstantinos Lolis (Hellenic Open University, Greece); Marinos Vlasakis and Ioannis Moscholios (University of Peloponnese, Greece); Eirini Keramidi (University of the Peloponnese, Greece); Dimitris Uzunidis (National Centre of Scientific Research Demokritos, Greece); Georgios Bouloukakis (University of Patras, Greece & Télécom SudParis, IP Paris, France); Michael D. Logothetis (University of Patras, Greece)

Thursday, July 16 10:00 - 11:00

## SS08/SS10/SS11: Advanced RF and Optical Technologies for 6G

Room: Pentland West

### ***Millimeter-Wave Optical Fiber/FSO Fronthaul Network Deployment with Hollow Core Fiber***

Jan Bohata, Jan Vocilka, Stanislav Zvanovec and Matej Komanec (Czech Technical University in Prague, Czech Republic); Radan Slavik (ORC, University of Southampton, United Kingdom (Great Britain))

**1.5 Gbps Optical Wireless Communications Using Far-Ultraviolet-C Micro-Light Emitting Diodes**

Hichem Zimi and Jonathan McKendry (University of Strathclyde, United Kingdom (Great Britain)); Sina Babadi (University of Cambridge, United Kingdom (Great Britain) & Cambridge University, United Kingdom (Great Britain)); Isaac N. O. Osahon (LiFi Research and Development Centre, United Kingdom (Great Britain) & University of Cambridge, United Kingdom (Great Britain)); Othman Isam Younus (University of Cambridge, United Kingdom (Great Britain) & IEEE Member, United Kingdom (Great Britain)); Jan Ruschel, Jens Rass and Sven Einfeldt (Ferdinand-Braun-Institut, Germany); Harald Haas (University of Cambridge, United Kingdom (Great Britain)); Martin Dawson, Sujjan Rajbhandari and Johannes Herrnsdorf (University of Strathclyde, United Kingdom (Great Britain))

**Few-Mode Reception and Coherent Digital Combining for Turbulence-Resilient FSO Links**

Davide Recano (Instituto de Telecomunicações, Portugal); Manuel Freitas (University of Aveiro, Portugal); Gil Fernandes (Instituto de Telecomunicações, Portugal); Andrea Carena (Politecnico di Torino, Italy); Paulo P Monteiro (Universidade de Aveiro & Instituto de Telecomunicações, Portugal); Fernando Guiomar (Instituto de Telecomunicações, Portugal)

**Remote Photonics Heterodyning for Seamlessly Converged Fibre-RF Networks with Sub-6 GHz/mmW Access**

Jaime Romero (Universitat Politècnica de Valencia, Spain); Jose Mora (Universidad Politécnica de Valencia, Spain); Luis Vallejo (Bangor University, United Kingdom (Great Britain)); Beatriz Ortega (ITEAM Research Institute, Spain); Jianming Tang (Bangor University, United Kingdom (Great Britain))

**Online UAV Trajectory Planning Under QoS Constraints to Mobile Users in Urban Environments**

Chenrui Qiu (London South Bank University, United Kingdom (Great Britain)); Loizos Kanaris (Sigint Solutions Ltd, Cyprus); Yongxu Zhu (Southeast University, China); Tasos Dagiuklas (London South Bank University, United Kingdom (Great Britain))

Thursday, July 16 10:00 - 11:00

## SS12: Performance-centric Design of ML-DL Systems across IoT Edge and Cloud

Room: Prestonfield

**Lightweight Hybrid ML-Based RAT Steering for Immersive HTC in WiFi-6G Networks**

Bharat Agarwal (Emerson/Ni, Germany); Gabriel-Miro Muntean (Dublin City University, Ireland)

**Optimizing Magnetic Resonance Image Segmentation Through Scalable Deep Learning and Hierarchical Data Management**

Lídices Reyes-Hung (University of Santiago of Chile & Centre for Multidisciplinary Research in Telecommunication Technologies, Chile); Gabriel Trinke (Universidad de Santiago de Chile, Chile); Ismael Soto (University of Santiago, Chile); Joel Serey (Universidad de Santiago de Chile, Chile)

**Performance Prediction of Data-Rebalancing Actions in Sharded NoSQL Clusters**

Georgios Paterakis (University of Patras, Greece); Efstratios Ntallaris (Foundation for Research and Technology, Greece); Kostas Magoutis (Forth-ICS, Greece); Ioannis Moscholios (University of Peloponnese, Greece); Georgios Bouloukakis (University of Patras, Greece & Télécom SudParis, IP Paris, France)

**An Efficient Dual-Specialist Framework for Real-Time Epileptic Seizure Detection and Prediction**

Peter A. AKor, Hadi Larijani, Rajiv R. Singh, Muhammad Usman and Enemali Godwin (Glasgow Caledonian University, United Kingdom (Great Britain))

Thursday, July 16 11:30 - 12:30

## Coll2-02: Optical Fiber Devices and Sensing applications

Room: Pentland East

### ***Instrument Development of All Fiber Coherent Raman Scattering Microspectroscopy***

Junfeng Jiang, Jinchao Dou, Wei Cheng, Genming Dong, Xiaoshuang Dai, Kun Liu and Shuang Wang (Tianjin University, China); P. Yan (Shenzhen University, China); Jinying Ma (Tianjin University of Technology and Education, China); Xin Zhou (Tianjin Medical University General Hospital, China); Hengfeng Yan (Inno Laser Technology, China); Qiang Fu and Jianbin Yang (Shenzhen University, China); Youjian Song (Tianjin University, China)

### ***High-Spatial-Resolution Phase-Chaos Brillouin Optical Correlation-Domain Sensing***

Yahui Wang, Jian Li, Lijun Qiao and Mingjiang Zhang (Taiyuan University of Technology, China)

### ***SPR-TFBG Fibre-Optic Sensor for Nitrite Detection: Simulation and Wavelength-Shift Quantification***

Liliana Martínez (University of San Juan Argentina, Argentina); Milagros E. Romero and Facundo Amarfil (Universidad Católica de Cuyo, Argentina); Natalia Hernandez-Yanez (Universidad de Santiago de Chile, Chile); Raul Zamorano-Illanes (Northumbria University, United Kingdom (Great Britain)); Ismael Soto (University of Santiago, Chile); Qiang Wu (Northumbria University, United Kingdom (Great Britain))

### ***Real-Time Optical Performance Monitoring of Microcomb-Based WDM Signals Using a Fourier-Domain Vector Oscilloscope***

Li Lun (Hong Kong Polytechnic University, Hong Kong); Chi Zhang (Huazhong University of Science and Technology, China); Hwa-yaw Tam and Chao Lu (The Hong Kong Polytechnic University, Hong Kong)

### ***A Symmetrical Three-Pulse Differential Cross-Spectrum BOTDR Sensor for High BFS Resolution with Sub-Meter Spatial Resolution***

Intan Fatimah Sasila Ghadzali, Ain Nabihah Mohammad Rihan and Mohd Saiful Dzulkefly Zan (Universiti Kebangsaan Malaysia, Malaysia); Yosuke Tanaka (Tokyo University of Agriculture and Technology, Japan); Mohd Hadri Hafiz Mokhtar, Norhana Arsad and Ahmad Ashrif A. Bakar (Universiti Kebangsaan Malaysia, Malaysia)

Thursday, July 16 11:30 - 12:30

## GT-04: 6G Communications

Room: Prestonfield

### ***Joint Direct Time-of-Flight Ranging and Communications with Pulse Position Modulation***

Callum T Geldard (STMicroelectronics Edinburgh, United Kingdom (Great Britain))

### ***A Nullspace-Fitting Method for Time Synchronization in Multipath 5G NR Systems***

Maryam Bacha (Western Sydney University, Australia); Qi Cheng (Western Sydney University, Australia); Ranjith Liyanapathirana (Western Sydney University, Australia)

**Deep Learning Based Co-Channel Interference Mitigation for Satellite Communication Systems**

Mirela Fetescu (Joanneum Research, Austria & Graz University of Technology, Austria); Johannes Ebert (Joanneum Research, Austria); Martin Winter (Joanneum Research Forschungsgesellschaft mbH, Austria); Franz Teschl (Graz University of Technology, Austria)

**Experimental Evaluation of Phase Noise Impact on OFDM at D-Band with Common Phase Error Based Phase Recovery**

Yalin Zhou and Izzat Darwazeh (University College London, United Kingdom (Great Britain))

**Geometry-Based Channel Quality Prediction Under Unknown RIS Configuration**

Chisom Michael Onyekwelu, Yooncheol Choi and Dongweon Yoon (Hanyang University, Korea (South))

Thursday, July 16 11:30 - 12:30

**SS05-02: Optical and Wireless Sensor Networks for 6G**

Room: Pentland West

**Real-Time PWM Recovery in Rolling Shutter OCC Using Header-Based Packet Detection: An Experimental Study**

Atiya Fatima Usmani (University of Aveiro, Portugal); Raul Zamorano-Illanes and Qiang Wu (Northumbria University, United Kingdom (Great Britain)); Pedro Fonseca (University of Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Luis Nero Alves (DETI, Universidade of Aveiro, Portugal & Instituto de Telecomunicações, Portugal)

**A Robust Whispering-Gallery-Mode Resonator Platform for Refractive Index Sensing**

Yiming Shen (Technological University Dublin, Ireland & Eblana Photonics, Ireland); Hongyan Xia, Haili Ma, Adeel Faruq and Yingchao Liu (Northumbria University, United Kingdom (Great Britain)); Zhe Wang (Technological University Dublin, Ireland); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Bo Cai (Eblana Photonics, Ireland); Yuliya Semenova (Technological University Dublin, Ireland); Qiang Wu (Northumbria University, United Kingdom (Great Britain))

**Cellular Automaton-Based Modelling for Fire Monitoring over LoRa Links**

Juan Yentzen (Universidad de Santiago de Chile, Chile); Ismael Soto (University of Santiago, Chile); Felipe Salgado (USACH, Chile); Enrique San Juan (University of Santiago de Chile, Chile); Cesar Azurdia (Universidad de Chile, Chile)

**Low-Complexity Line Coding for Baseline Wander Mitigation in OOK-Based Optical WBANs**

Christos Giachoudis and Ali Khalighi (Ecole Centrale Méditerranée, France); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic)

**Embedded Pilot Asymmetrically Clipped Optical OFDM (EPACO-OFDM) for Enhanced Spectral Efficiency and PAPR Reduction in VLC**

Marco Yacelga-Pinto (Universidad Carlos III de Madrid, Spain); Víctor P. Gil Jiménez (University Carlos III of Madrid, Spain); Riera Palou (University of the Balearic Islands (UIB), Spain); Guillem Femenias (University of the Balearic Islands, Spain)

Thursday, July 16 2:00 - 2:50

## Plenary talk 4: Prof. Nuno Borges Carvalho, "Energy sustainable IoT SWIPT and LEO satellite integration"

Room: Pentland

Thursday, July 16 2:50 - 4:00

### Coll1-04: Advanced techniques for OWC

Room: Pentland East

#### ***Hybrid Optical Wireless/RF System for Indoor Health Monitoring of Elderly***

Nermine Elmabrouk (Université de Limoges, France); Stéphanie Sahuguède (XLIM UMR CNRS 7252 - University of Limoges, France); Anne Julien-Vergonjanne (University of Limoges & XLIM CNRS 7252, France)

#### ***Novel Multiplier-Optimised Real-Time Radix-4 IFFT Architecture for High-Throughput, Low-Latency Optical OFDM Transceivers on FPGA***

Michael Codd (Maynooth University, Ireland); Ciara McDonald (Maynooth University); John Dooley (National University of Ireland Maynooth, Ireland)

#### ***Enhancing Security Performance of Optical Wireless Communication with Acoustic Waves in Fog Conditions***

Alex Cameron (University of Northumbria, United Kingdom (Great Britain)); Carlos Guerra-Yáñez (Czech Technical University, Czech Republic); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic); Xicong Li (University of Glasgow, United Kingdom (Great Britain)); Zabih Ghassemlooy and Richard Fu (Northumbria University, United Kingdom (Great Britain))

#### ***Robust Wavelet-First Preprocessing for IM/DD-OOK Under Drift and Impulsive Transients***

Isabel Silva (Universidad de Santiago de Chile, Chile); Ismael Soto (University of Santiago, Chile); Pablo Palacios Játiva (Universidad Diego Portales, Chile); Raul Zamorano-Illanes (Northumbria University, United Kingdom (Great Britain))

#### ***A Cascade ISAC Framework for RIS-Assisted Asymmetric RF/VLC Systems***

Claudia Leoni (University of Roma Tre, Italy); Vasilis K. Papanikolaou (Friedrich-Alexander-University Erlangen-Nuremberg, Germany); Anna Maria Vegni (Roma TRE University, Italy); Robert Schober (Friedrich-Alexander University Erlangen-Nuremberg, Germany)

#### ***Implementation of Visible Light Communication Carrier Synchronization for Internet of Things***

Luis Rodrigues (Institute of Telecommunications of Aveiro, Portugal & Universidade de Aveiro, Portugal); Monica Figueiredo (Polytechnic Institute of Leiria, Portugal); Luis Nero Alves (DETI, Universidade of Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain))

Thursday, July 16 2:50 - 3:10

## Invited talk 2: Prof. Emeritus Gerald Farrell "The Role of Artificial Intelligence in Research and Publication: A 2026 Perspective"

Room: Prestonfield

Thursday, July 16 2:50 - 4:00

## SS06: Green and Intelligent RF and Optical Wireless Communication Systems

Room: Pentland West

### ***Retroreflector-Based Channel Estimation for Robust Optical Wireless Communication***

Jianhui Chen (University of Edinburgh, United Kingdom (Great Britain)); Egecan Guler (The University of Edinburgh, United Kingdom (Great Britain)); Wasuu O. Popoola (University of Edinburgh, United Kingdom (Great Britain))

### ***Multi-Region ROI Detection Algorithm for MISO-HSSK Optical Camera Communication Systems Using Hybrid Color Space Filtering***

Jonas Elias Peñailillo and Cesar Azurdia (Universidad de Chile, Chile); Vicente Matus (IDeTIC-ULPGC, Spain); Pablo Palacios Játiva (Universidad Diego Portales, Chile); David Zabala-Blanco (Universidad Católica del Maule, Chile); Ismael Soto (University of Santiago, Chile)

### ***A Hybrid VLC-IR Optical Wireless Architecture with Load Balancing for NLoS Tunnels***

Nicolás Morales (Universidad de Santiago de Chile & CIMTT, Chile); Ismael Soto (University of Santiago, Chile); Raul Zamorano-Illanes (Northumbria University, United Kingdom (Great Britain)); David Zabala-Blanco (Universidad Católica del Maule, Chile)

### ***Enhancing the Performance of Free Space Optical Communication Using Wavelet-Based de-Noiseing***

Fanuel Elias, Muhammad Ijaz and Zeyad Elsaraf (Manchester Metropolitan University, United Kingdom (Great Britain)); Sunday Cooley Ekpo (Manchester Metropolitan University & Akwa Ibom State University of Technology, United Kingdom (Great Britain)); Pablo Palacios Játiva (Universidad Diego Portales, Chile); Cesar Azurdia (Universidad de Chile, Chile)

### ***Edge-Native AI-Enabled Spatial Decision Region Formation for Optical Attocell-Based Indoor VLC***

Rida Zia-ul-Mustafa (University of Bristol, United Kingdom (Great Britain)); Hoa Le Minh and Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic)

Thursday, July 16 3:10 - 4:00

## GT-05: IOT and Cyber Security

Room: Prestonfield

### ***Physical Layer Security in Finite Blocklength Massive IoT with Randomly Located Eavesdropper***

Tijana Devaja (Aalborg University, Denmark); Milica Petkovic (University of Novi Sad, Faculty of Technical Sciences, Serbia); Sokol Kosta (Aalborg University, Denmark); Dejan Vukobratović (University of Novi Sad, Serbia); Čedomir Stefanović (Aalborg University, Denmark)

### ***IoT as a Cyber Attack Platform: Lessons from Real-World and Proof-of-Concept Incidents***

Vassilios G. Vassilakis and Thomas Girdler (University of York, United Kingdom (Great Britain))

### ***ZeroScatter-LoRa: Microcontrollers are RFIDs***

Shayan Majumder (Heriot-Watt University, United Kingdom (Great Britain) & LibreCube, Germany); Matthew Reynolds (University of Washington, USA); Stylianos D. Asimonis (University of Patras, Greece); Sandeep Joshi (Birla Institute of Technology and Science (BITS) Pilani, India); George

Goussetis and Spyridon Nektarios Daskalakis (Heriot-Watt University, United Kingdom (Great Britain))

Thursday, July 16 4:30 - 5:30

## GT-06: Command, Control, and Communication

Room: Prestonfield

### ***A Wing-Borne NVIS Command System***

Sergey Karamov (Novus Converged Aerospace Ltd., United Kingdom (Great Britain))

### ***A Multi-Mode Surface Sensing Simulation Framework for UAS Integrating Radio-Frequency, Infrared and Optical Domains***

Nikolay Lysenko and Sergey Karamov (Novus Converged Aerospace Ltd., United Kingdom (Great Britain))

### ***Reliable Dual-Protocol Data Transfer Architecture for Real-Time Instrumentation Control***

Faiza Abdul Salam, Mohammed Al-Obaidly, Giedre Astrauskaite, Shuja Ansari and Massimo Vassalli (University of Glasgow, United Kingdom (Great Britain))

### ***A Layered SFU Architecture for Reproducible Multi-Party WebRTC Systems***

Francisco Manuel García, David Vallejo, Santiago Schez-Sobrino, Sergio Martínez-Cid, Rubén Grande and Javier Albusac (University of Castilla-La Mancha, Spain)

### ***Improving HydroCast Protocol Efficiency Using Spatial Temporal PIML in Underwater Communication***

Amith Srivatsa (Vellore Institute of Technology, India); Neha Anna Lenchu, Sai Aarshia Radhakrishnan, Sheean Jolicoeur, Rani Chinnappa Naidu and Rajesh Kumar M (VIT Mauritius, Mauritius)

Thursday, July 16 4:30 - 5:30

## SS03-02: Teletraffic Models, Traffic Engineering and Network Optimization

Room: Pentland East

### ***An Analytical Study of the Limited Availability Group Model for Multirate Poisson Traffic***

Marinos Vlasakis (University of Peloponnese, Greece); Maria Kourtesi (Hellenic Open University, Greece); Iskanter-Alexandros Chousainov (University of Peloponnese, Greece); Eirini Keramidi (University of the Peloponnese, Greece); Dimitris Uzunidis (National Centre of Scientific Research Demokritos, Greece); Ioannis Moscholios (University of Peloponnese, Greece); Michael D. Logothetis (University of Patras, Greece)

### ***On the Analysis and Validation of a Multiparameter Analytical Loss Model for an IaaS Cloud Physical Infrastructure***

Maria Kourtesi (Hellenic Open University, Greece); Marinos Vlasakis, Iskanter-Alexandros Chousainov and Ioannis Moscholios (University of Peloponnese, Greece); Michael D. Logothetis (University of Patras, Greece)

**Adaptive Offloading Control in 6G Cell-Free O-RAN Using Reinforcement Learning**

Pouya Mehdizadeh (Universitat Politècnica de Catalunya, Spain & Iquadrat Informatica S.L, Spain); Golshan Famitafreshi (Iquadrat, Spain); John S Vardakas (Iquadrat Informatica, Spain); Christos Verikoukis (University of Patras, Greece)

**Priority-Aware CAC Method with PI Adjustment for Low-Priority VoIP Sessions in Emergencies**

Sota Narikiyo and Sumiko Miyata (Institute of Science Tokyo, Japan); Ken-ichi Baba (Kogakuin University, Japan); Katsunori Yamaoka (Institute of Science Tokyo, Japan)

**LSTM-Based Traffic Forecasting for Dynamic P2MP Light-Tree Reconfiguration in Metro-Access Networks**

Polyzois Soumplis (National Technical University of Athens, Greece); Konstantinos Christodoulopoulos (University of Athens, Greece); Konstantinos Yiannopoulos (University of Peloponnese, Greece & Institute of Communication and Computer Systems, Greece); Emmanouel Varvarigos (National Technical University of Athens, Greece)

Thursday, July 16 4:30 - 5:30

## SS07-02:Camera-Based Optical Wireless Communication Systems

Room: Pentland West

**Selective Detection of Black Rot in Grapevine Leaves Using Convolutional Neural Networks**

Patrícia Sergueevna Moltchanova (Universidade de Aveiro, Portugal); Luis Nero Alves (DETI, Universidade of Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Carla Sofia Santos Ferreira (Instituto Politécnico de Coimbra, Portugal)

**Optical Camera Communication as a Complementary Technology for Internet of Things: Architectures, Applications and Future Perspectives**

Fábio Matias (Universidade de Aveiro, Portugal); Miguel Rêgo (University of Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Atiya Fatima Usmani (University of Aveiro, Portugal); Monica Figueiredo (Polytechnic Institute of Leiria, Portugal); Luis Nero Alves (DETI, Universidade of Aveiro, Portugal & Instituto de Telecomunicações, Portugal)

**Energy-Autonomous Optical Camera Communication Node for Intra-Satellite Links**

Vicente Matus (IDeTIC-ULPGC, Spain); Jaime Aranda Cubillo and Rafael Perez-Jimenez (Universidad de Las Palmas de Gran Canaria, Spain); Jose Rabadan (IDeTIC-ULPGC, Spain)

**Real-Time Optical Camera Communication Based on Side-Emitting Fibers**

Jakub Formánek (Czech Technical University of Prague, Czech Republic); Carlos Guerra-Yáñez (Czech Technical University, Czech Republic); Stanislav Zvanovec and Matej Komanec (Czech Technical University in Prague, Czech Republic)

Friday, July 17

Friday, July 17 9:10 - 10:00

## Plenary talk 5: Dr Sébastien Bigo, "A Giant Laser Pointer: The New Way to Watch Movies on the Moon"

Room: Pentland

Friday, July 17 10:00 - 11:00

### GT-07: Applications of ML/AI

Room: Pentland West

#### ***Energy-Aware AI Optimization for Scene-Adaptive Video Encoding in Edge Communication***

David Elias Emmanuel, Nimesha Senanayake and Warnakulasuriya Fernando (University of Strathclyde, United Kingdom (Great Britain))

#### ***Label-Efficient Self-Supervised Acoustic Indoor Positioning Enabling Effortless Deployment***

Daan Delabie, Liesbet Van der Perre and Lieven De Strycker (KU Leuven, Belgium)

#### ***An Interpretable AI Architecture for System-Level Reasoning from Engineering Documentation***

Amrutha Moorthy (Patenti Technology Solutions and University of Oxford, India & CEO, United Kingdom (Great Britain))

#### ***Cuboid Extraction for Graphite Electrode Reuse Using an AI-Enhanced Optimization Framework***

Jerusha Samuel Jayaraj (Universidade do Minho, Portugal); Monica Figueiredo and Luis Conde (Polytechnic Institute of Leiria, Portugal)

#### ***A Systematic Evaluation of Machine Learning Algorithms and Handcrafted Features Across Multiple Plant Disease Datasets***

Abdulla Al Mahin Khan (Multimedia University, Malaysia); It Ee Lee (Multimedia University, Malaysia & Northumbria University, United Kingdom (Great Britain)); Teong Chee Chuah, Qamar Wali and Gwo Chin Chung (Multimedia University, Malaysia); Khanthanou Luangxaysana (Faculty of Engineering National University of Laos, Laos)

Friday, July 17 10:00 - 11:00

### SS05/SS06: Optical and RF Wireless for 6G

Room: Pentland East

#### ***Incremental Learning in Network Traffic Management: A Fixed-Representation Rehearsal Approach***

Francisco Rau (MaxLinear, Spain & Universitat de Valencia, Spain); Petia Georgieva (University of Aveiro, DETI/IEETA & Institute of Electronics Engineering and Telematics of Aveiro (IEETA), Portugal); Carlos Herranz (Maxlinear & MXL, Spain); Iñaki Val (MaxLinear, Spain); Joaquin Perez (Universitat de Valencia, Spain)

#### ***Comprehension of Lower Band Terahertz Frequencies Beyond 6G: An Investigative Paradigm***

Fawziya Al Wahaibi (Utas Muscat, Oman); Hamed Saffa Al-Raweshidy (University of Brunel, United Kingdom (Great Britain)); Dr.Maddikera Kalyan Chakravarthi (University of Technology and Applied Sciences, Muscat, Oman); D Srinivasa Rao (University of Technology and Applied Sciences, Oman); Pradeep Reddy Gogulamudi (Manipal Institute of Technology, India); Ch. Pradeep Reddy (CGC University, India)

***A SDN-Based Access Control Framework for Powerline Communications Networks***

Luis Miguel Giraldo and Joaquin Perez (Universitat de Valencia, Spain); Raimundo Garcia (Department of Electronic Engineering - Higher Technical School of Engineering, Spain); Atiyeh Pouralizadeh and Volker Jungnickel (Fraunhofer Heinrich Hertz Institute & Technische Universität Berlin, Germany); Francisco Rau (MaxLinear, Spain & Universitat de Valencia, Spain); Carlos Herranz (Maxlinear & MXL, Spain)

***Integrated 6G LiFi-NOMA Framework with Optical Sensing Under Poisson-Gaussian Channel Noise***

Zeyad Elsaraf and Muhammad Ijaz (Manchester Metropolitan University, United Kingdom (Great Britain)); Pablo Palacios Játiva (Universidad Diego Portales, Chile); Cesar Azurdia (Universidad de Chile, Chile); Bamidele Adebisi (Manchester Metropolitan University, United Kingdom (Great Britain)); Salman Ghafoor (National University of Sciences and Technology, Pakistan); Ismael Soto (University of Santiago, Chile)

***Event-Triggered Selective Channel Refinement for Energy-Constrained IoT Communications***

Adewale Femi Ogabi and Geetika Aggarwal (Teesside University, United Kingdom (Great Britain)); Gobind Pillai (Teesside University & Member IET, Member IEEE, United Kingdom (Great Britain)); Michael Short (Teesside University, United Kingdom (Great Britain))

**Friday, July 17 11:30 - 12:30**

**Coll1-05: OWC system analysis, modelling and implementation**

Room: Pentland East

***Experimental Validation of the Benefits of OFDM-Based Waveforms for Optimizing Data Rates in OCC Receivers with Rolling-Shutter Cameras***

Xinyu Zhang and Alexis Alfredo Dowhuszko (Aalto University, Finland); Miguel Rêgo and Pedro Fonseca (University of Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Luis Nero Alves (DETI, Universidade of Aveiro, Portugal & Instituto de Telecomunicações, Portugal); Jyri Hämäläinen and Risto Wichman (Aalto University, Finland)

***Experimental Evaluation of Multi-User Multi-Point Transmission Schemes in Multi-Cell VLC Systems***

Ramya Mummati, Xinyu Zhang and Alexis Alfredo Dowhuszko (Aalto University, Finland); Konstantinos G. Rallis (Aristotle University of Thessaloniki, Greece); Risto Wichman and Jyri Hämäläinen (Aalto University, Finland)

***MU-MIMO for LiFi: Performance Analysis Based on IEEE Std 802.11***

Sreelal Maravanchery Mana (Fraunhofer Heinrich Hertz Institute, Germany); Atiyeh Pouralizadeh and Volker Jungnickel (Fraunhofer Heinrich Hertz Institute & Technische Universität Berlin, Germany); Siddarth Marwaha (TU Braunschweig, Germany); Eduard A Jorswieck (Technische Universität Braunschweig, Germany); Rainer Strobel (MaxLinear Germany, Germany)

***Indoor Visible Light Communications: Modeling and Channel Bandwidth Aspects of a Real Indoor Office Room***

Pranav Sharda (University of Oxford, United Kingdom (Great Britain))

***Air-Sea Surface Modeling and Operating Link Range Evaluation for AUV-to-UAV Optical Wireless Communication Links***

Ikenna Chinazaekpere Ijeh (FUNAI, Nigeria); Ali Khalighi (Ecole Centrale Méditerranée, France); Wasii O. Popoola (University of Edinburgh, United Kingdom (Great Britain))

***Performance Analysis of Semantic-Aware Optical Wireless Communications***

Milica Petkovic (University of Novi Sad, Faculty of Technical Sciences, Serbia); Dejan Vukobratović (University of Novi Sad, Serbia)

Friday, July 17 11:30 - 12:30

## GT-08: DSP for Communications

Room: Pentland West

### ***Iterative Local Rényi Entropy with Time-Frequency Filtering for Crossing Components in Compressive Sensing-Based Reconstruction***

Vedran Jurdana (University of Rijeka, Croatia)

### ***Open-Set Multi-Label Automatic Modulation Classification for Overlapping Radio Frequency Digital Communications***

[Iain C High](#) (University of Edinburgh, United Kingdom (Great Britain)); David J Sadler (Roke Manor Research Ltd., United Kingdom (Great Britain)); Yoann Altmann (Heriot-Watt University, United Kingdom (Great Britain)); Wasiu O. Popoola (University of Edinburgh, United Kingdom (Great Britain))

### ***Blind Symbol Rate Estimation via Wavelet-Based Deep Learning for Noncoherent FSK Signals***

Hanseung Cho, Ganghyuk Jeon, Chisom Michael Onyekwelu and Dongweon Yoon (Hanyang University, Korea (South))

### ***A Fully-Parallel and Flexible Baseband Processor Using Processing-in-Memory for Wireless Systems***

[Mojtaba Mahdavi](#) (Ericsson, Sweden)

### ***Analysis of Crosstalk Drift in SLM-Based Mode-Multiplexing Systems for Free-Space and Multimode Fibre Transmission***

Zun Htay, Fabio A Barbosa and Filipe M. Ferreira (University College London, United Kingdom (Great Britain))

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