2018 IEEE 20th International Conference on e-Health Networking, Applications and Services (Healthcom) Tenative Program (Aug 13)

Sunday, September 16

09:00-18:00

Monday, September 17

08:30-18:00

Tuesday, September 18

08:00-19:00
**Thursday, September 20**

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<td>09:00-09:45</td>
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<td>09:45-10:00</td>
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<td>12:00-12:15</td>
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**Sunday, September 16**

**R: Registration**

Preliminary reservation requested

*Rooms: Hotel Garni VSB - TU Ostrava, Hotel Imperial*

Registration only for attendees accommodated in recommended hotels - Hotel Imperial and Hotel Garni VSB TU Ostrava. On request.

**Sunday, September 16 9:00 - 17:00**

**SE1: Visit of NATO Days**

Preliminary reservation requested

*Rooms: Hotel Garni VSB - TU Ostrava, Hotel Imperial*

Free of charge. Event includes entrance to NATO days and free transport from recommended conference hotels in specified times. Fully sponsored by Moravian Silesian Regional Government.

**Monday, September 17**

**Monday, September 17 8:30 - 18:00**

**Registration**

*Rooms: Gong - Lobby, Hotel Garni VSB - TU Ostrava, Hotel Imperial, VSB - TU Campus Poruba*

**Monday, September 17 10:00 - 10:15**

**W-BR1: Coffee break - Workshop**

*Room: VSB - TU Campus Poruba AULA Lobby*

Coffee break will be held in VSB - TU Ostrava Campus in Ostrava Poruba. Meeting point is building Aula. The closest tramway stop is “Hlavni trida”

**Monday, September 17 10:15 - 11:45**

**W1: IOT-HEALTH 2018 and ETPHA 2018 Workshops**

*Room: Tramway*

**VITASENIOR-MT: a telehealth solution for the elderly focused on the interaction with TV**

Gabriel Pires (Instituto Politécnico de Tomar & Instituto de Sistemas e Robótica - Coimbra, Portugal); Pedro Correia, Dário Jorge, Diogo Santos, Nelson Gomes, Pedro Dias, Pedro Ferreira, Ana Lopes, António Manso and Luis Almeida (Instituto Politécnico de Tomar, Portugal); Luis Oliveira (IT, UBI and Polytechnic Institute of Tomar - Instituto of Telecommunications, Portugal); Renato Panda (Instituto Politécnico de Tomar, Portugal); Paulo Monteiro (Softinsa - Centro de Inovação Tecnológica de Tomar, Portugal); Carla Grácio (Comunidade Intermunicipal do Médio Tejo, Portugal); Telmo Pereira (ESTSC - Instituto Politécnico de Coimbra, Portugal)

Investigation on Dielectric Properties of Glucose Aqueous Solutions at 500 KHz-5MHz for Noninvasive Blood Glucose Monitoring

Ning Zeng (Shantou University, P.R. China); Jingzhen Li, Tobore Igbe and Yuhang Liu (Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, P.R. China); Yan Cui (Shantou University, P.R. China); Ze-dong Nie (Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, P.R. China)

**Performance Evaluation and Benchmarking of Mission Critical Medical Access Systems**

Ashraf A Ali (University of South Wales, United Kingdom (Great Britain)); Fatimah Alzahrany (University of south weals, United Kingdom (Great Britain)); Andrew Ware (University of South Wales, United Kingdom (Great Britain)); Khalid Al-Begain (University of South Wales & Glamex Security Ltd, United Kingdom (Great Britain))
Monday, September 17 11:45 - 12:45

**W-L1: Lunch - Workshops**

Room: VSB - TU Campus Poruba AULA Lobby

Lunch will be held in VSB - TU Ostrava Campus in Ostrava Poruba at the building Aula (NA).

Monday, September 17 13:00 - 17:00

**W2: THE 1ST INTERNATIONAL WORKSHOP ON QUALITY OF SERVICE IN EHEALTHCARE**

Room: Tramway

Chair: Radek Martinek (VSB - Technical University of Ostrava & Faculty of Electrical Engineering and Computer Science, Czech Republic)

Meeting point is building AULA of VSB - TU Ostrava campus at Ostrava Poruba. Coffee break will be served directly in Tramway.

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**Adaptive Linear Neuron for Fetal Electrocardiogram Extraction**

Radana Kahankova (VSB - Technical University of Ostrava, Czech Republic); Radek Martinek (VSB - Technical University of Ostrava & Faculty of Electrical Engineering and Computer Science, Czech Republic); Martina Mikolasova and Rene Jaros (Technical University of Ostrava, Czech Republic)

**Outage performance of time switching energy harvesting wireless sensor network deploying NOMA**

Sy Nguyen (Binh Duong University, Vietnam & Binh duong, Czech Republic); Thang-Sang Nguyen (Binh Duong University, Vietnam); Tin Phu (Ton Duc Thang University, Ho Chi Minh City, Vietnam); Miroslav Voznak (VSB - Technical University of Ostrava, Czech Republic)

**Use of a FIR filter for fetal phonocardiography processing**

Rene Jaros (Technical University of Ostrava, Czech Republic); Radek Martinek (VSB - Technical University of Ostrava & Faculty of Electrical Engineering and Computer Science, Czech Republic); Radana Kahankova and Marcel Fajkus (VSB - Technical University of Ostrava, Czech Republic)

**Real-time Patient Localization in Urgent Care: System Design and Hardware Perspective**

Jaromir Koncny (VSB - Technical University of Ostrava, Czech Republic); Michal Prauzek (VSB - Technical University of Ostrava, Czech Republic); Libor Michalek and Martin Tomis (VSB - Technical University of Ostrava, Czech Republic); Radek Martinek (VSB - Technical University of Ostrava & Faculty of Electrical Engineering and Computer Science, Czech Republic)

**SMART medical polydimethylsiloxane for monitoring vital signs of the human body**

Jan Nedoma (VSB-TUO, Czech Republic); Marcel Fajkus (VSB - Technical University of Ostrava, Czech Republic); Jakub Cubik (VSB-TUO, Czech Republic); Stanislav Kepak (VSB-Technical University of Ostrava, Czech Republic); Radek Martinek (VSB - Technical University of Ostrava & Faculty of Electrical Engineering and Computer Science, Czech Republic); Jan Vanus (VSB - Technical University of Ostrava, Czech Republic); Rene Jaros (Technical University of Ostrava, Czech Republic)

**A Robust PPG-based Heart Rate Monitor for Fitness and eHealth Applications**

Maryamsadat Shokrekhodaei and Stella Quinones (University of Texas at El Paso, USA); Radek Martinek (VSB - Technical University of Ostrava & Faculty of Electrical Engineering and Computer Science, Czech Republic); Homer Nazeran (University of Texas at El Paso, USA)

**Comparison of fetal phonocardiography de-noising by wavelet transform and the FIR filter**

Rene Jaros (Technical University of Ostrava, Czech Republic); Radek Martinek (VSB - Technical University of Ostrava & Faculty of Electrical Engineering and Computer Science, Czech Republic); Radana Kahankova, Jan Vanus and Marcel Fajkus (VSB - Technical University of Ostrava, Czech Republic)

**Monitoring of environmental variables in rooms of the Department of Cybernetics and Biomedical Engineering**

Jan Velicka and Martin Pies (VSB - Technical University of Ostrava, Czech Republic); Radovan Hajovsky (VSB-TUO, Czech Republic)
Tuesday, September 18

Tuesday, September 18 8:00 - 19:00

Registration
Room: Gong - Lobby

Tuesday, September 18 9:00 - 9:30

Opening ceremony
Room: Gong - Conference hall

Welcome speech by Dean of Faculty of Electrical Engineering and Computer Science of VSB - Technical university of Ostrava - prof. Pavel Brandstetter President of Moravian Silesian region - prof. Ivo Vondrak

Tuesday, September 18 9:30 - 10:15

K1: Keynote lecture - Andreas Lymberis, Ph.D.
Room: Gong - Conference hall
Chair: Norbert Noury (University of Lyon & Team Biomedical Sensors, France)
Tuesday, September 18 11:00 - 12:20

S1-1: DEVICES 1
Room: Gong - Conference hall
Chair: Marek Penhaker (VSB - Technical University of Ostrava, Czech Republic)

A non-intrusive system for seated posture identification
Daniele Bibbo and Federica Battisti (Università degli Studi Roma Tre, Italy); Silvia Conforto (University Roma Tre, Italy); Marco Carli (Università degli Studi Roma TRE, Italy)

Strain gauges position optimization in designing custom load cells for sport gesture analysis
Daniele Bibbo (Università degli Studi Roma Tre, Italy); Stefano Gabriele (University "Roma Tre" of Rome, Italy); Andrea Scorza (Roma TRE University, Italy); Maurizio Schmid (Roma Tre University, Italy); Salvatore Andrea Sciuto (University of ROMA TRE, Italy); Silvia Conforto (University Roma Tre, Italy)

Considerations for the Design of an Activity Recognition System Using Inertial Sensors
Athanasios I. Kyritsis, Michel Deriaz and Dimitri Konstantas (University of Geneva, Switzerland)

Body Movement Monitoring for Parkinson’s Disease Patients Using A Smart Sensor Based Non-Invasive Technique
Sara Soltaninejad, Andres Rosales Castellanos and Fang Ba (University of Alberta, Canada); Mario Alberto Ibarra-Manzano (Roma TRE University, Italy); Irene Cheng (University of Alberta, Canada)

S1-2: SIGNAL/DATA PROCESSING AND SYSTEMS 1
Gong - Room 1
Chairs: Giulia Cisotto (University of Padova, Italy), D Santhosh Reddy (Academic Block A, WiNet Lab, Kandi, Sangareddy & IIT-Hyderabad, India)

Non-invasive determination of the arterial compliance by cardiovascular bioimpedance signal processing
Ridha Ben Salah (Prince Sattam Bin Abdulaziz University & College of Applied Medical Sciences, Saudi Arabia); Tareq Alhadidi (Prince Sattam Bin Abdulaziz University & Biomedical Technology Dep., Saudi Arabia); Ihsen Ben Salah (National Engineering School of Carthage, Tunisia); Kais Ouni (ENICarthage, Tunis & National Engineering School of Carthage, Tunisia)

Similarity Recognition of Interval-Based Sleep Data
Marc Haßler, Andreas Burgrdorf, Christian Kohlschein and Tobias Meisen (RWTH Aachen University, Germany)

A Bispectrum-based Approach for Detecting Deception using EEG Signals
Rami Alazrai, Faisal Alqasem and Saqr Alaarag (German Jordanian University, Jordan); Khalil M. Ahmad Yousef (Hashemite University, Jordan); Mohammad I. Daoud (German Jordanian University, Jordan)

Beats-Per-Minute (BPM): A Microservice-based Platform for the Monitoring of Health Related Data via Activity Trackers
Orla O’Brien (Cork Institute of Technology & Dell, Ireland); Ruairí D O’Reilly (Cork Institute of Technology, Ireland)

S1-3: MEDICAL, BIOMEDICAL AND HEALTH INFORMATICS 1
Gong - Room 2
Chair: Jonas Wahslen (KTH, Sweden)

Authentication and Usability in mHealth Apps
Zhongwei Teng, Peng Zhang, Xiao Li, William Nock and Marcelino Rodriguez-Cancio (Vanderbilt University, USA); Denis Gilmore (Vanderbilt University Medical Center, USA); Jules White and Douglas C. Schmidt (Vanderbilt University, USA); Jonathan Nesbitt (Vanderbilt University Medical Center, USA)

Blockchain Utilization in Healthcare: Key Requirements and Challenges
Tanesh Kumar (University of Oulu, Finland); Vidhya Ramani (Centre for Wireless Communication, University of Oulu, Finland); Ijaz Ahmad (University of Oulu, Finland); An Braeken (Vrije Universiteit Brussel, Belgium); Erkki Harjula (University of Oulu, Finland)

Blockchain-based Personal Health Data Sharing System Using Cloud Storage
Tuesday, September 18 12:20 - 13:20

**L1: Lunch**

Room: Gong - Food Court

Tuesday, September 18 13:20 - 14:40

**S2-1: DEVICES 2**

Room: Gong - Conference hall

Chair: Lubomir Štěpánek (Faculty of Biomedical Engineering, Czech Technical University in Prague, Czech Republic)

*Human Body Energy Harvesting Solutions for Wearable Technologies*

Antonino Proto (VSB - Technical University of Ostrava, Czech Republic); Daniele Bibbo (Università degli Studi Roma Tre, Italy); Martin Cerny (VSB - Technical University of Ostrava, Czech Republic); Lukas Peter (VSB-Technical University of Ostrava, Czech Republic); Silvia Conforto (University Roma Tre, Italy); Maurizio Schmid (Roma Tre University, Italy); Marek Penhaker (VSB - Technical University of Ostrava, Czech Republic)

*HEAL: A Health Analytics Intelligent Agent Platform for the acquisition and analysis of physiological signals*

Arindam Ghosh (Oviva AG, Germany & University of Trento, Italy); Evgeny Stepanov, Juan Mayor Torres, Morena Danieli and Giuseppe Riccardi (University of Trento, Italy)

*Smart telemetry kit for proactive health monitoring in rural India: The journey so far and the road ahead*

Sudheer Babu and Abhinav Vishwanatham (Sri Sathya Sai Institute Of Higher Learning, India); Amar Sainath Reddy Tamanampudi (Sri Sathya Sai Institute Of Higher Learning, India); Boopala Krishnan (Sri Sathya Sai Institute of Higher Learning & Deemed University, India); Sai Prem Shaji and Siva Sankara Sai Sanaganati (Sri Sathya Sai Institute of Higher Learning, India); Jai Ganesh Udayasankaran (Sri Sathya Sai Central Trust & Member, Governing Committee, Asia eHealth Information Network (AeHIN), India); Prasana Raja (SmartX Connected Products, Chennai, India)

*Evaluation of Movement Deficiencies in Patients with Vestibular Disorders using Motion Analysis*

Jaroslav Majerník (Pavol Jozef Safarik University in Kosice, Slovakia)

**S2-2: SIGNAL/DATA PROCESSING AND SYSTEMS 2**

Gong - Room 1

Chair: Ruairi D O'Reilly (Cork Institute of Technology, Ireland)

*Deep Learning Based Automated Extraction of Intra-Retinal Layers for Analyzing Retinal Abnormalities*

Taimur Hassan (National University of Sciences and Technology, Pakistan); Anam Usman (CASE, Pakistan); Muhammad Usman Akram (CEME NUST, Pakistan); Feroze Masood (Center for Advanced Studies in Engineering, Pakistan); Ubaid Yasin (Armed Forces Institute of Ophthalmoology, Pakistan)

*Extraction and Analysis of RPE layer from OCT Images for Detection of Age Related Macular Degeneration*

Muhammad Majid Sharif (National University of Sciences and Technology, Pakistan); Muhammad Usman Akram (CEME NUST, Pakistan); Asad Waqar Malik (National University of Science and Technology (NUST), Pakistan)

*Classification of Nonalcoholic Fatty Liver Texture Using Convolution Neural Networks*

D Santhosh Reddy (Academic Block A, WiNet Lab, Kandi, Sangareddy & IIT-Hyderabad, India); Ramkrishna Bharath (Indian Institute of Technology, India); P Rajalakshmi (Indian Institute of Technology Hyderabad, India)

*A Novel Computer-Aided Diagnosis Framework Using Deep Learning for Classification of Fatty Liver Disease in Ultrasound Imaging*

D Santhosh Reddy (Academic Block A, WiNet Lab, Kandi, Sangareddy & IIT-Hyderabad, India); Ramkrishna Bharath (Indian Institute of Technology, India); P Rajalakshmi (Indian Institute of Technology Hyderabad, India)
**S2-3: MEDICAL, BIOMEDICAL AND HEALTH INFORMATICS 2**

**Gong - Room 2**

Chair: Alberto Huertas Celdrán (University of Murcia, Spain)

- **'We must ignore ePrescription': An empirical analysis of Czech physicians’ attitudes against eHealth**
  - Michal Dolezel (University of Economics, Czech Republic)

- **Clustering Inter-Arrival Time of Health Care Encounters for High Utilizers**
  - Chengliang Yang, Chris Delcher, Elizabeth Shenkman and Sanjay Ranka (University of Florida, USA)

- **Simplifying biomedical data sharing through a web portal generator**
  - André Malta (Universidade de Aveiro, Portugal); José Luis Oliveira (University of Aveiro, Portugal)

- **Brokering Services for Integrating Health Cloud Platforms for Remote Patient Monitoring**
  - Raafat Aburukba, Assim Sagabyroon, Fadi Aloul and Niha Thodika (American University of Sharjah, United Arab Emirates)

**Tuesday, September 18 14:40 - 15:00**

**BR2: Coffee break**

Room: Gong - Food Court

**Tuesday, September 18 15:00 - 16:40**

**S3-1: DEVICES 3**

**Room: Gong - Conference hall**

Chair: Daniele Bibbo (Università degli Studi Roma Tre, Italy), Athanasios I. Kyritsis (University of Geneva, Switzerland)

- **Analysis of Chaotic Behaviors in Gait of the Elderly using the CAREN Extended system**
  - Henryk Josiński (Polish-Japanese Academy of Information Technology, Poland); Adam Świtoński (Silesian University of Technology, Poland); Piotr Grabiec (Polish-Japanese Academy of Information Technology, Poland); Agnieszka Michalczuk (Silesian University of Technology, Poland); Magdalena Pawlyta and Konrad Wojciechowski (Polish-Japanese Academy of Information Technology, Poland)

- **Assessment of Gait Parameters in Virtual Environment**
  - Agnieszka Szczęsna (Silesian University of Technology, Poland); Monika Błaszczyszyn (Opole University of Technology, Poland); Magdalena Pawlyta (Polish-Japanese Academy of Information Technology, Poland); Agnieszka Michalczuk (Silesian University of Technology, Poland)

- **Multipurpose Sensor for Human Movement Analysis**
  - Jan Foltyn and Radek Halfar (VŠB - Technical University of Ostrava, Czech Republic); Martin Cerny (VSB - Technical University of Ostrava, Czech Republic); Norbert Noury (University of Lyon & Team Biomedical Sensors, France)

- **Evaluation of wearable Kinematic Algorithms for the Monitoring of Ecological Activity**
  - Norbert Noury (University of Lyon & Team Biomedical Sensors, France); Bruno Perriot (University of Lyon & Sleepinnov Technology, France)

- **Automated Gait Analysis using a Kinect Camera and Wavelets**
  - Beatriz Munoz (Valle del Lili Clinical, Colombia); Yor Castaño, Juan David Arango Paredes and Andres Navarro (Universidad Icesi, Colombia)

**S3-2: SIGNAL/DATA PROCESSING AND SYSTEMS 3**

**Gong - Room 1**

Chair: Ondrej Klement (Faculty of Biomedical Engineering, Czech Technical University in Prague, Czech Republic), Lukas Peter (VSB-Technical University of Ostrava, Czech Republic)

- **A Convolutional Neural Network for Smoking Activity Recognition**
  - Fayez Alharbi (Goldsmiths, University of London, United Kingdom (Great Britain)); Katayoun Farrahi (Lecturer & University of Southampton, United Kingdom (Great Britain))

- **Toward an Embedded OFDM-based System for Living Cells Study by Electrochemical Impedance Spectroscopy**
Physiological Waveform Imputation of Missing Data using Convolutional Autoencoders
Daniel Miller, Andrew Ward, Nicholas Bambos and David Scheinker (Stanford University, USA); Andrew Shin (Stanford University School of Medicine, USA)

Classification of grasping tasks based on EEG-EMG coherence
Giulia Cisotto and Anna Guglielmi (University of Padova, Italy); Leonardo Badia (Università degli Studi di Padova, Italy); Andrea Zanella (University of Padova, Italy)

A Novel Classification Framework for EEG Based Four Class Motor Imagery Using Kullback-Leibler Regularized Riemannian Manifold
Pradeep Mishra, Jagadish B, M. P. R. S. Kiran and P Rajalakshmi (Indian Institute of Technology Hyderabad, India); D Santhosh Reddy (Academic Block A, WiNet Lab, Kandi, Sangareddy & IIT-Hyderabad, India)

S3-3: Practical Applications of e-Health
Gong - Room 2
Chairs: Adelina Basholli (University of Sheffield- South East European Research Centre, United Kingdom (Great Britain)), Stefan Lentelink (Roessingh Research and Development, The Netherlands)

Research on an information sharing system using COI specialized for urgency in the home care field
Hiroshi Yajima (Tokyo Denki University, Japan); Yuva Totsuka (Tokyou Denki University, Japan)

Cooperative Note-Taking in Psychotherapy Sessions: An Evaluation of the Therapist’s User Experience with Tele-Board MED
Anja Perlich (Hasso-Plattner-Institut, Universität Potsdam, Germany); Christoph Meinel (Hasso Plattner Institute, University of Potsdam, Germany)

Automated Diagnosis of Clinic Workflows
Alex Cheng and Jules White (Vanderbilt University, USA)

MineBike: Exergaming with Minecraft
Yunho Huh and Gregory Duarte (University of California, Irvine, USA); Magda El Zarki (University of California at Irvine, USA)

Measuring inconsistent diagnoses
Diana Costa and Manuel Martins (University of Aveiro, Portugal)

Tuesday, September 18 17:00 - 18:00
Welcome drink
Room: Hlubina Brickhouse

Tuesday, September 18 18:00 - 19:00
Concert
Room: Hlubina Brickhouse

Concert of Orchestra of VSB - Technical university of Ostrava. Event is fully sponsored by VSB - Technical university of Ostrava, free entrance

Tuesday, September 18 19:00 - 23:59
Welcome reception
Room: Hlubina Brickhouse

Wednesday, September 19
Wednesday, September 19 8:30 - 15:00
Registration
Room: Gong - Lobby

Wednesday, September 19 9:00 - 10:00
K2: Keynote lecture - prof. Mounir Mohktari
Room: Gong - Conference hall
Chair: Norbert Noury (University of Lyon & Team Biomedical Sensors, France)

Wednesday, September 19 10:00 - 10:30
BR3: Coffee break
Room: Gong - Food Court

Wednesday, September 19 10:30 - 12:30
S4-1: eHealth for aging
Room: Gong - Conference hall
Chairs: Martin Cerny (VSB - Technical University of Ostrava, Czech Republic), Anja Perlich (Hasso-Plattner-Institut, Universität Potsdam, Germany)

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A Health Monitoring Application to Support Informal Caregivers of People with Cognitive Impairment
Stefan Lentelink, Marit Dekker, Mirka Evers, Boris van Schooten, Hermie Hermens and Monique Tabak (Roessingh Research and Development, The Netherlands)

Hardware / Software Architecture for Services in the Hearing Aid Industry
Benjamin Cauchi and Marco Eichelberg (OFFIS-Institut für Informatik, Germany); Andreas Huewel and Kamil Adiloglu (HörTech gGmbH, Germany); Hartmut Richter and Marei Typlt (Audifon GmbH & Co, Germany)

Anomaly Detection Techniques in Mobile App Usage Data among Older Adults
Athanasios I. Kyritsis, Michel Deriaz and Dimitri Konstantas (University of Geneva, Switzerland)

Meeting challenges of activity recognition for ageing population in real life settings
Aimilia Papagiannaki, Evangelia I Zacharaki and Konstantinos Deltouzos (University of Patras, Greece); Roberto Orselli (Smartex s. r. l., Italy); Anne Freminet (University Hospital of Nancy, France); Sibora Cela (University Hospital of Patras, Greece); Elena Aristodemou and Marina Polycarpou (Care and Rehabilitation Unit MATERIA, Cyprus); Marina Kotsani (University Hospital of Nancy, France); Athanasia Benetos (University Hospital of Nancy, Greece); John Ellul (University Hospital of Patras, Greece); Vassilis Megalooikonomou (University of Patras, Greece)

A Proposal for Monitoring People of Health Risk Group Using IoT Technologies
Mauricio Neto (Federal University of Ceara, Brazil); Emanuel Coutinho (UFC, Brazil); Leonardo Moreira (Federal University of Ceara, Brazil); Jose N de Souza (UFC, Brazil); Nazim Agoulmine (University of Evry Val d’Essonne, USA)

Healthcare professionals’ attitudes towards remote patient monitoring through sensor networks
Adelina Basholli (SEERC, Thessaloniki, Greece); Thomas Lapkas (The University of Sheffield International Faculty, Greece); Peter Bath (University of Sheffield, United Kingdom (Great Britain)); George Eleftherakis (CITY College, Greece)

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S4-2: IMAGE PROCESSING 1
Gong - Room 1
Chairs: Jan Kubicek (VSB-Technical University of Ostrava & Faculty of Electrical Engineering and Computer Science, Czech Republic), Antonino Proto (VSB - Technical University of Ostrava, Czech Republic)

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Health Risk Prediction Using Big Medical Data - a Collaborative Filtering-Enhanced Deep Learning Approach
Xin Li and Juan Li (North Dakota State University, USA)

Personalized Effect of Health Behavior on Blood Pressure: Machine Learning Based Prediction and Recommendation
Po-Han Chiang and Sujit Dey (University of California, San Diego, USA)

Noninvasive aspiration detection using through-transmission ultrasound
Yosuke Hara and Yukio Katori (Tohoku University, Japan); Shigeaki Okumura and Hirofumi Taki (Kyoto University, Japan); Hiroki Umeda (Tohoku Institute of Technology, Japan); Tatsuya Uechi, Fumihiko Kawamura, Yoichi Haga, Ryoichi Nagatomi and Shin-ichi Izumi (Tohoku University, Japan)

*Learning Based Segmentation of Skin Lesion from Dermoscopic Images*

Muhammad Ammar (NUST College of EME, Pakistan); Sajid Gul Khawaja (National University of Sciences and Technology (NUST), Pakistan); Abeera Atif (National University of Sciences and Technology, Pakistan); Muhammad Usman Akram (CEME NUST, Pakistan); Muntaha Sakeena (University of Applied Sciences, Austria)

*Supervised Level Sets For Dermoscopic Image Segmentation*

Muntaha Sakeena (University of Applied Sciences, Austria); Rubata Riazat (X-Lab, Chinese Academy of Sciences, Austria); Farhan Riaz (National University of Sciences and Technology (NUST), Pakistan); Ali Hassan (National University of Sciences and Technology, Pakistan)

*Evaluation of facial attractiveness for purposes of plastic surgery using machine-learning methods and image analysis*

Lubomír Štěpánek (Faculty of Biomedical Engineering, Czech Technical University in Prague, Czech Republic); Pavel Kasal (Faculty of Biomedical Engineering, Czech Republic); Jan Mesták (First Faculty of Medicine, Czech Republic)

S4-3: SIGNAL/DATA PROCESSING AND SYSTEMS 4

Gong - Room 2

*Design and Optimization of an Autonomous, Ambulatory Cardiac Event Monitor*

Bertrand Massot (Univ. Lyon, INSA Lyon, INL CNRS UMR5270); Florin Huty (Univ. Lyon, INSA Lyon, INRIA CITI); Claudine Gehin (Univ. Lyon, INSA Lyon, INL CNRS UMR5270); Norbert Noury (Univ. Lyon, UCBL, INL CNRS UMR5270)

*Device to monitor quiet breathe of CRD patients*

Sagar Sharma (Feroze Gandhi Institute of Engineering and Technology, India); Rakesh Mishra (Feroze Gandhi Institute of Engineering & Technology, GB University, India)

*Sensor based solution for cranial remodeling orthosis*

Radek Halfar and Jan Foltyn (VSB - Technical University of Ostrava, Czech Republic); David Oczka and Martin Cerny (VSB - Technical University of Ostrava, Czech Republic); Jan Rosicky and Jan Rosicky (Invent Medical Group, Czech Republic); Ales Grygar (Invent Medical, Czech Republic)

*Comparison of home blood pressure measurement devices in real conditions*

Jan Havlík and Markéta Sušánková (Czech Technical University in Prague, Czech Republic)

*Rat Cortical Layers Classification extracting Evoked Local Field Potential Images with Implanted Multi-Electrode Sensor*

Xiaying Wang (ETHZ, Switzerland); Michele Magno (ETH Zurich and University of Bologna, Switzerland); Lukas Cavigelli (ETH Zurich, Switzerland); Mufti Mahmud (Nottingham Trent University, United Kingdom (Great Britain)); Claudia Cecchetto and Stefano Vassanelli (University of Padova, Italy); Luca Benini (ETH Zurich, Switzerland)

*Microelectrode Neuronal Activity Biomarker of the Internal Globus Pallidus in Dystonia Correlates with Long-term Neuromodulation Effects*

Ondrej Klempir, Radim Krupicka and Vaclav Cejka (Faculty of Biomedical Engineering, Czech Technical University in Prague, Czech Republic); Robert Jech (First Medical Faculty, Charles University, Czech Republic)

Wednesday, September 19 12:30 - 13:30

L2: Lunch
Room: Gong - Food Court

Wednesday, September 19 13:30 - 14:15

K3: Keynote lecture - prof. Norbert Noury
Room: Gong - Conference hall
Chair: Martin Cerny (VSB - Technical University of Ostrava, Czech Republic)

Wednesday, September 19 14:15 - 14:54

PS1: Poster, Short Paper and Demo FLASH PRESENTATIONS
This document appears to be a program or agenda for an event, possibly a conference or similar gathering. It lists various sessions, presentations, and speakers, along with their affiliations. The document also includes information about room assignments and chair arrangements for different sessions throughout the day.
Towards Real-Time Patient Prioritization in Hospital Emergency Services
Bruno Lima (University of Porto - Faculty of Engineering & INESC TEC, Portugal); João Pascoal Faria (University of Porto - Faculty of Engineering, Portugal)

Evaluation of apathy by single 3D accelerometer in ecological situation. Case of patients with behavioral variant of fronto-temporal dementia
Yongjian Liu and Bénédicte Batrancourt (Inserm Unité 1127, France); Frederic Marin (University of Technology of Compiegne (UTC), France); Richard Levy (Inserm Unité 1127, France)

Motion Control of Rehabilitation Brace
Josef Cernohorsky, Marcel Horák and Ales Richter (Technical University of Liberec, Czech Republic)

Analysis of cloud computing security in perspective of Saudi Arabia
Yara Alhumaidan and Moudhi Aljamea (IAU, Saudi Arabia); Lama Alajmi (Imam Abdulrahman Bin Faisal University, Saudi Arabia); Maqsood Mahmud (Imam Abdulrahman bin Faisal University Dammam, Saudi Arabia)

Supervised Level Sets For Dermoscopic Image Segmentation
Muntaha Sakeena (University of Applied Sciences, Austria)

Internet of Things Embedded System for Emotion Recognition
Aleksandra Kawala-Janik, Michal Podpora and Agnieszka Rozanska (Opole University of Technology, Poland); Zaneta Rachwaniac-Szczechinska (Silesian University, Poland)

Electrohypersensitivity (EHS) is a Disability that Requires Immediate Attention
Magda Havas (Trent University, Canada)

Safety and Security Architecture Analyses Framework for the Internet of Things of Medical Devices
Julia Rauscher and Bernhard Bauer (University of Augsburg, Germany)

DESREE - a web-based software ecosystem for the personalized, collaborative and multidisciplinary management of primary breast cancer
Nekane Larburu, Naiara Muro, Mónica Arrue, Roberto Álvarez and Jon Kerexeta (Vicomtech, Spain)

Integrated Architecture for a mHealth Platform designed for e-Empowering teenagers to prevent obesity (TeenPower)
Marta Carvalho and Rodrigo Alves (CItechCare - Center for Innovative Care and Health Technology (IPLeiria), Portugal); Catarina Reis (Computer Science and Communication Research Centre (CIIC), Portugal); Ricardo Martinho (School of Technology and Management, Polytechnic Institute of Leiria, Portugal); Pedro Sousa (CItechCare - Center for Innovative Care and Health Technology (IPLeiria) & School of Health Science, Polytechnic Institute of Leiria, Portugal); Pedro Gaspar (CItechCare - Center for Innovative Care and Health Technology (IPLeiria) & School of Health Science, Portugal)

An Analysis of eHealth: Modes, Usage Level, Enablers, and Obstacles
Anuja Konda (Mission San Jose High School, USA)

Exploring Breast Cancer Patterns for Different Outcomes using Artificial Intelligence
Nekane Larburu, Mónica Arrue, Naiara Muro, Roberto Álvarez and Jon Kerexeta (Vicomtech, Spain)

COPD Management by Symptom and Activity Tracking
Rui Hu (IBM Research Zurich, Switzerland); Thomas Brunschwiler (IBM Research - Zurich, Switzerland)

Wednesday, September 19 15:00 - 16:15
SE2: Visit of Dolni Vitkovice area (group1)
Reservation requested
Gong - Room 2
Commented visit of Dolni Vitkovice area. Limited number of places. Free of charge. Fully sponsored by VSB - Technical University of Ostrava

Wednesday, September 19 15:00 - 17:00
W3: WORKSHOP DECISION SUPPORT SYSTEMS FOR ONCOLOGY
Gong - Room 1
Towards a CAD System for Breast Cancer Based on Individual Micractalifications?
Wednesday, September 19 16:20 - 18:00

**SE3: Visit of Dolni Vitkovice area (group2)**

Reservation requested  
Gong - Room 2

Commented visit of Dolni Vitkovice area. Limited number of places. Free of charge. Fully sponsored by VSB - Technical university of Ostrava

Wednesday, September 19 18:30 - 23:59

**Conference Banquet**

Rooms: Gong - Conference hall, Gong - Food Court, Gong - Lobby

Thursday, September 20

**Thursday, September 20 8:30 - 10:00**

**Registration**

Room: Gong - Lobby

**Thursday, September 20 9:00 - 9:45**

**K4: Keynote lecture - prof. Miroslav Voznak**

Room: Gong - Conference hall  
Chair: Marek Penhaker (VSB - Technical University of Ostrava, Czech Republic)

**Thursday, September 20 9:45 - 10:00**

**BR5: Coffee break**

Room: Gong - Food Court

Thursday, September 20 10:00 - 12:00

**S5-1: COMMUNICATIONS AND NETWORKING**

Room: Gong - Conference hall  
Chairs: Arindam Ghosh (Oviva AG, Germany & University of Trento, Italy), Radek Martinek (VSB - Technical University of Ostrava & Faculty of Electrical Engineering and Computer Science, Czech Republic)

*An Extensible Semantic Search Engine for Biomedical Publications*

Christian Kohlschein, Daniel Klischies, Alexander Paulus, Andreas Burgdorf and Tobias Meisen (RWTH Aachen University, Germany); Markus Kipp (Ludwig Maximilian University of Munich, Germany)
Design and Development of a Biocultural Ontology for Personalized Diabetes Self-Management of American Indians
Juan Li and Shadi Alian (North Dakota State University, USA)

FHIR Ontology Mapper (FOM): Aggregating Structural and Semantic Similarities of Ontologies towards their Alignment to HL7 FHIR
Athanasios Kiourtis, Argyro Mavrogjorgou and Dimosthenis Kyriazis (University of Piraeus, Greece)

A JavaScript Web Framework for Rapid Development of Applications in IoT Systems for eHealth
Jonas Wahslen (KTH, Sweden); Thomas Lindh (Royal Institute of Technology, Sweden)

Depression Severity Estimation from Multiple Modalities
Evgeny Stepanov (University of Trento, Italy); Stephane Lathuiliere (INRIA Grenoble, France); Shammur Chowdhury (BRAC University, Bangladesh); Arindam Ghosh (Oviva AG, Germany & University of Trento, Italy); Radu Laurentiu Vieriu, Nicu Sebe and Giuseppe Riccardi (University of Trento, Italy)

Medical Telerobotics and the Remote Ultrasonography Paradigm Over 4G Wireless Networks
Sotiris Avgousti (Cyprus University Of Technology, Cyprus); Andreas S. Panayides (University of Cyprus, Cyprus & University of New Mexico, USA); Efthychios G Christoforou and Argyris Argyrou (University of Cyprus, Cyprus); Antonis Jossif (PAEDI Center for Specialized Pediatrics, Cyprus); Panicos Masouras (Cyprus University Of Technology, Cyprus); Cyril Novales and Pierre Veyres (Laboratoire PRISME - Universite d’Orleans, France)

Thursday, September 20 10:00 - 11:40
S5-2: MEDICAL, BIOMEDICAL AND HEALTH INFORMATICS 3
Gong - Room 1
Chair: Chengliang Yang (University of Florida, USA)

Making Sense of Data Translating complexity for improved chronic pain management
Leigh Anne Hepburn (DHI, United Kingdom (Great Britain)); Ellen Jaatun (NTNU & St Olav University Hospital, Norway)

ICE+: Improving Security, QoS, and High Availability of Medical Cyber-Physical Systems through Mobile Edge Computing
Alberto Huertas Celdrán and Felix J. Garcia Clemente (University of Murcia, Spain); James Weimer and Insup Lee (University of Pennsylvania, USA)

Detecting the Number of Persons in the Bed Area to Enhance the Safety of Artificially Ventilated Persons
Alexander Gerka (OFFIS, Germany); Max Pfnosthorr and Christian Lünkes (OFFIS - Institute for Information Technology, Germany); Kevin Sparenberg (Jade University of Applied Sciences Oldenburg, Germany); Christian Lins (OFFIS - Institute for Information Technology, Germany); Andreas Hein (Universität Oldenburg, Germany)

Wireless Multi-Hop Networking for a Group of Exercisers Spread in a Sports Ground
Takuma Hamaqami (Oki Electric Industry Co., Ltd., Japan); Yasutaka Kawamoto (Oki Electric Industry Co., Ltd. & Japan, Japan); Shinsuke Hara (Osaka City University, Japan); Hiroyuki Yomo (Kansai University, Japan); Byusuke Miyamoto (Meiji University & School of Science and Technology, Japan); Takunori Shimazaki (Osaka City University, Japan); Hiroyuki Okuhata (Synthesis Corporation, Japan)

A Mobile Health Solution for Medication Adherence Intervention and its Real World Evidence
Chao Jiang (Shanghai CareLinker Medical Technology Co., Ltd, P.R. China); Hongguang Zhang and Kai Liu (Shanghai CareLinker Medical Technology Co., Ltd, P.R. China); Shibao Zheng (Shanghai Jiao Tong University, P.R. China); Youren Yang, Fei Tian and Chu Feng (Shanghai CareLinker Medical Technology Co., Ltd., P.R. China)

Thursday, September 20 10:00 - 12:00
S5-3: DEVICES 4
Gong - Room 2
Chairs: Daniele Bibbo (Università degli Studi Roma Tre, Italy), Marek Penhaker (VSB - Technical University of Ostrava, Czech Republic)

Electrooculography as a Tool For Managing Application
Lukas Peter (VSB-Technical University of Ostrava, Czech Republic); Antonino Proto and Martin Cerny (VSB - Technical University of Ostrava, Czech Republic)
A Low Complexity Low Power Indoor Positioning System Based on Wireless Received Signal Strength
Hung-Yi Li and Hsi-Pin Ma (National Tsing Hua University, Taiwan)

Measurement System for Classification of Hand’s Gesture
Lukas Peter (VSB-Technical University of Ostrava, Czech Republic); Antonino Proto and Marek Penhaker (VSB - Technical University of Ostrava, Czech Republic)

Real-Time Continuous Gesture Recognition with Wireless Wearable IMU Sensors
Yong-Ting Wang and Hsi-Pin Ma (National Tsing Hua University, Taiwan)

Deep Convolutional Neural Network Learning for Activity Recognition using real-life sensor’s data in smart devices
Maryam Fekri and Omair Shafiq (Carleton, Canada)

Smart Saline Level Monitoring System Using ESP32 And MQTT-S
Debajani Ghosh (MNNIT, Allahabad, India); Ankit Agrawal, Navin Prakash and Pushkal Goyal (GLA University, India)

Thursday, September 20 12:00 - 12:15
Closing Ceremony
Room: Gong - Conference hall
Chairs: Martin Cerny (VSB - Technical University of Ostrava, Czech Republic), Norbert Noury (University of Lyon & Team Biomedical Sensors, France)

Thursday, September 20 12:15 - 13:15
L3: Lunch
Room: Gong - Food Court