Sm@rt Nets 2023

2023 International Conference on

Smart Applications, Communications and Networking

July 25 - 27, 2023, Istanbul - Türkiye

https://smartnets.ieee.tn/

Full Program

Date	Event
Day 1 – Tuesday, July 25, 2023	
9:10 – 9:30	**Welcome & Opening Ceremony** - *Room: Blue Hall* **Prof. Canan Aykut Bingöl**, Rector of the *Yeditepe University (Honorary General Chair)* **Prof. Şebnem Baydere & Prof. Suat Özdemir** (General Chairs) **Prof. Tarek Bejaoui** (Technical Program Chair)
9:30 – 10:30	Keynote Speaker 1: **Prof. Bhaskar Krishnamachari** *Title: Blockchain Technology and its applications to the Internet of Things* - *Room: Blue Hall*
10:30 – 11:00	**Coffee Break**
11:00 – 13:00	**Session 1- Industry 4.0 & Management Systems (onsite)** - *Room: Taksim* **Session 2- Advances in Signal Processing & Communication Systems (onsite)** - *Room: Red Hall* **Session 3- AI/ML Techniques and System Engineering I (onsite)** - *Room: Blue Hall* **Session 4- Communication Systems and Security (onsite)** - *Room: Galata* **Session 5- Advances in IoT research and Apps (onsite)** - *Room: Green Hall*
13:00 – 14:30	**Lunch**
14:30 – 15:00	**Demo Session**
15:00 – 17:30	**PNDC Workshop (online from UK)** - *Room: Blue Hall*
15:05 – 15:25	*Speaker:* **James Irvine (PNDC/Strathclyde)** **Title:** *Distribution Network Security: Lessons from the first 10 years of PNDC*
15:25 – 15:50	*Speaker:* **Francesco Pititto (DELL)** **Title:** Empowering the Grid: Exploring Secure Data Virtualization in Smart Grid for a Sustainable Future
15:50 – 16:15	Speaker: **Mayamiko Hara (UKPN)** **Title**: Learnings from Designing a Smart Substation
16:15 – 16:40	Speaker: **Karl Gerhardt (Siemens)** **Title**: Digital Twin – Virtual IED testing of Protection and communication functions
16:40 – 17:05	Speaker: **Nigel Nawacki (NOKIA)** **Title**: IEC 61850 and private LTE for ADMS
17:05 – 17:30	*Speaker:* **Julian Stafford (EUTC/JRC)** **Title:** Overview of EUTC and JRC advocacy and standardization activities for utility smart grids
Day 2 – Wednesday, July 26, 2023	
9:15 – 10:15	Keynote Speaker 2: **Prof. Kay Römer** *Title: Dependable Internet of Things for Safety-Critical Applications* - *Room: Blue Hall*
10:15 – 10:45	**Coffee Break**
10:45 – 12:30	**Session 6- AI/ML Techniques and System Engineering II (onsite)** - *Room: Blue Hall* **Session 7- Advances in Communications and Antenna Systems (onsite)** - *Room: Red Hall* **Session 8- AI/ML Techniques and System Engineering III (onsite)** - *Room: Green Hall* **Session 9- Networks and Communications I (online)** - *Room: Taksim* **Session 10- Advances in Communications and Networking (online)** - *Room: Galata*
12:30 – 14:00	**Lunch**
	Best Paper Awards Ceremony - *Room: Blue Hall*
14:00 – 15:00	Keynote Speaker 3: **Prof. Paul Havinga** *Title: Smart Sensing for a Better World* - *Room: Blue Hall*
15:00 – 15:15	**Coffee Break**
15:15 – 16:45	**Session 11- Networks and Communications II (onsite)** - *Room: Blue Hall* **Session 12- AI/ML Techniques and System Engineering IV (onsite)** - *Room: Red Hall* **Session 13- Trust, Privacy and Security I (online)** - *Room: Green Hall* **Session 14- AI/ML Techniques for Healthcare and Smart Cities I (online)** - *Room: Galata*
16:50	**Banquet**
Day 3 – Thurs, July 27	
9:30 – 10:30	Keynote Speaker 4: **Prof. Jon Crowcroft** **Title**: *Some Challenges of Scaling Federated Learning* - *Room: Blue Hall*
10:30 – 11:00	**Coffee Break**
11:00 – 13:00	**Session 15- Data Analytics and Smart Apps (online)** - *Room: Blue Hall* **Session 16- Advances in Engineering for Smart Cities and Apps (online)** - *Room: Red Hall* **Session 17- Trust, Privacy and Security II (online)** - *Room: Green Hall* **Session 18- AI/ML Techniques for Healthcare and Smart Cities II (online)** - *Room: Galata*
13:00 – 13:15	**Closing Ceremony** - *Room: Blue Hall*
13 :15	**Lunch**

Full SmartNets 2023 Conference Program

The live sessions of the conference will be held in Istanbul, Türkiye - Time Zone (GMT/UTC+03:00)

Day 1 – Tuesday, July 25, 2023

09:10 – 09:30

Welcome & Opening Ceremony

Room: *Blue Hall / Rectorate Building 5th Floor*

Prof. Canan Aykut Bingöl, Rector of the *Yeditepe University (Honorary General hair)*

Prof. Şebnem Baydere & Prof. Suat Özdemir (General Chairs)

Prof. Tarek Bejaoui (Technical Program Chair)

09:30 - 10:30

Keynote Speaker 1: **Prof. Bhaskar Krishnamachari**

Title: Blockchain Technology and its applications to the Internet of Things

Session Chair*: Prof. Suat Özdemir (Hacettepe University, Türkiye)*

Room: *Blue Hall / Rectorate Building 5th Floor*

11:00 – 13:00

Session 1- Industry 4.0 & Management Systems
  Session Chair: ***Dr. Samsul Huda (Okayama University, Japan)***

Room: *Taksim / Rectorate Building 1st Floor (1H03)*

1570902103   Appliances Operation Modes Identification Using States Clustering
Abdelkareem Jaradat (University of Western Ontario, Canada); Hanan Lutfiyya (The University of Western Ontario, Canada); Anwar Haque (Western Ontario, Canada); Muhamed Alarbi (University of Western Ontario, Canada)

1570914163   A Proposal of IoT Application for Plant Monitoring System With AWS Cloud Service
Samsul Huda, Yasuyuki Nogami and Takuma Akada (Okayama University, Japan); Maya Rahayu (Politeknik Negeri Bandung & Institut Teknologi Bandung, Indonesia); Md. Biplob Hossain, Muhammad Bisri Musthafa, Le Hoang Anh and Yang Jie (Okayama University, Japan)

1570876590   Integration of Industry 4.0 in the Metal Roofing Manufacturing Industry
Ndala Mulongo, Khathutshelo Mushavhanamadi (University of Johannesburg, South Africa)

1570912259   Towards an Infrastructure and Architecture of Nanotechnology in Agriculture for Abu Dhabi
Salama Alhameli, Amna Almazrouei, Amal Almenhali, Ahmed Shuhaiber (Zayed University, United Arab Emirates)

1570876592   A Systematic Review of the Relationship Between Industry 4.0 Application and Performance Improvement

Khathutshelo Mushavhanamadi, Ndala Mulongo (University of Johannesburg, South Africa)

Session 2: Advances in Signal Processing & Communication Systems
Session Chair: *Dr. Anna Scaglione (Cornell Tech, USA)*

Room: *Red Hall / Rectorate Building 5th Floor*

1570901994   Discrete Wavelet Transform-Based Denoising Method for Real Electrocardiogram

Nacéra Méziane (Faculty of Electrical Engineering, University of Sciences and technology Houari Boumediene, Algeria); Dalila Meziane (USTHB, Algeria); Merouane Bouzid (USTHB University, Electronics Faculty, Algeria)

1570901784   Hardware-Based Error Correction Systems for Hamming Codes: A Review of the Literature

Khawla Alnajjar (University of Sharjah, United Arab Emirates); Abdallah Y.I Abushawish (University City of Sharjah & Sharjah, United Arab Emirates); Sam Ansari (University of Sharjah, United Arab Emirates)

1570892557   Optimum Noise Mechanism for Probabilistic Differentially Private Queries in Discrete Finite Sets

Sachin Kadam (Indian Institute of Technology Bombay, India); Prof. Anna Scaglione and Nikhil Ravi (Cornell Tech, USA); Sean Peisert (Lawrence Berkeley National Laboratory, USA); Brent Lunghino and Aram Shumavon (Kevala Inc., USA)

1570901861   Efficient Coding of Wideband ISF Parameters: Application of Variable Rate SSVQ Scheme

Merouane Bouzid (USTHB University, Electronics Faculty, Algeria); Salah Eddine Cheraitia (USTHB University, Algeria); Nacéra Méziane (Faculty of Electrical Engineering, University of Sciences and technology Houari Boumediene, Algeria)

Session 3: AI/ML Techniques and System Engineering I
Session Chair: *Dr. Chalermpol Charnsripinyo (NSTDA-NECTEC, Tailand)*

Room: *Blue Hall / Rectorate Building 5th Floor*

1570908330   Smart City Traffic Monitoring: YOLOv7 Transfer Learning Approach for Real-Time Vehicle Detection

Zahra Esfandiari Baiat and Sebnem Baydere (Yeditepe University, Turkey)

1570909314   C-V2X Link Decision With Machine Learning

Ömer Sokmaz (Eskişehir Osmangazi University, Turkey); Ahmet Yazar (Eskisehir Osmangazi University, Turkey)

1570918126   A Novel Blockchain Based Decentralized Data Management Model for Swarm UAV Systems

Gökberk Açıkgöz (Hacettepe University, Turkey); Feyza Yildirim Okay (Gazi University, Turkey); Suat Ozdemir (Hacettepe University, Turkey)

1570908686   **Opportunistic RL-Based WiFi Access for Aerial Sensor Nodes in Smart City Applications**

Mehmet Ariman and Lal Verda Cakir (Istanbul Technical University, Turkey); Mehmet Ozdem (Turk Telekom, Turkey); Berk Canberk (Edinburgh Napier University, United Kingdom (Great Britain))

1570888135   **Towards Symbolic Representation-Based Modeling of Temporal Knowledge Graphs**

Siraj Munir (University of Urbino Carlo Bo, Italy); Stefano Ferretti (University of Urbino, Italy)

Session 4: Communication Systems and Security
   Session Chair: *Dr. Hanaa Basheer (University of Baghdad, Iraq)*

      Room: *Galata / Rectorate Building 1st Floor (1H04)*

1570908964   **FAME: Federated Decentralized Trusted Data Marketplace for Embedded Finance**

Argyro Mavrogiorgou, Athanasios Kiourtis, Georgios Makridis, Dimitrios Kotios, Vasileios Koukos and Dimosthenis Kyriazis (University of Piraeus, Greece); John Soldatos, George George Fatouros and Dimitrios Drakoulis (Innov-Acts, Cyprus); Pedro Malo (Universidade Nova de Lisboa & Uninova, Portugal); Martin Serrano (National University of Ireland Galway - NUIG & Insight Centre for Data Analytics (DERI - Digital Enterprise Research Institute), Ireland); Mauro Isaja (Engineering Ingegneria Informatica S.p.A., Italy); Raquel Lazcano and Juan Manuel Vera (Atos Research and Innovation, Spain); Fabiana Fournier and Lior Limonad (IBM Research - Haifa); Konstantinos Perakis and Dimitris Miltiadou (UBITECH, Greece); Pavlos Kranas (Leanxscale, Spain); Alper Sen (Trailblu Yazilim Anonim Sirketi, Turkey); Irene Zattarin and Ernesto Troiano (GFT, Italy)

1570909218   **FPGA-Based Tunable Keccak Core**

Ahmed Maache and Abdesattar Kalache (University of Boumerdes, Algeria)

1570912067   **Exploiting Spatial Correlations: Group Key Generation for Secure IoT Device Networks**

Mohammed Omar, Ahmed Badawy, Khalid Abualsaud and Elias Yaacoub (Qatar University, Qatar); Mohsen Guizani (MBZUAI, United Arab Emirates)

1570913613   **A Sentiment Analysis Approach for Identifying Users' Security and Privacy Perception of Metaverse in Twitter**

Mousa Al-kfairy (Zayed University, United Arab Emirates); Ahmed Al-Adaileh (Independent Researcher, Qatar); Mohammad Tubishat (Zayed University, United Arab Emirates); Omar Alfandi (University of Goettingen & Zayed University, Germany); Maitha BinAmro (Zayed University, United Arab Emirates); Ayham Omary (Umm Al-Qura University, Saudi Arabia)

1570914077   **Attack Detection in IoT-Based Healthcare Networks Using Hybrid Federated Learning**

May Itani (Beirut Arab University, Lebanon); Hanaa Basheer (University of Baghdad, Iraq); Fouad Eddine AbdulKhaleq (Monty Mobile, Lebanon)

1570901764   **Analysis of the Demilitarized Zone Implementation in Java Madura Bali Electrical Systems to Increase the Level of IT/OT Cyber Security With the Dual DMZ Firewall Architecture Method**

Agus Harya Maulana and I Gede Putu Ari Suyasa (PT PLN (PERSERO), Indonesia); Erwan Kurniawan (PT PLN (Persero), Indonesia)

Session 5: Advances in IoT research and Apps

Session Chair: *Dr. Alex Amir Modarresi (California State University Northridge, USA)*

<u>Room:</u> *Green Hall / Rectorate Building 5th Floor*

1570893161   The Design of a Cough Disease Classification System Using Cube-Transformer
Yuh-Shyan Chen (National Taipei University, Taiwan); Chih-Shun Hsu (Shih Hsin University, Taiwan); Bo-Xuan Yang (National Taipei University, Taiwan)

1570908409   Portable AI-Powered Spice Recognition System Using an eNose Based on Metal Oxide Gas Sensors
Montaser Ramadan (Istanbul OKAN University, Turkey); Mohammad Alkhedher (Abu Dhabi University, United Arab Emirates); Sina Alp (Istanbul OKAN University, Turkey); Bekir Tevfik Akgün (Yeditepe University, Turkey)

1570908666   Design and Implementation of Proactive Multi-Type Context-Aware Recommender System for Patients Suffering Diabetes
Abdellatif Abu-Issa (Birzeit University, Palestine)

1570901899   A Low-Cost IoT Mobile System for Air Quality Monitoring in Developing Countries, a Study Case in El Salvador
Omar Otoniel Flores-Cortez (Universidad Tecnologica de El Salvador, El Salvador); Carlos Pocasangre Jimenez (Universidad de El Salvador, El Salvador); Fernando Arevalo (Ruhr-Universität Bochum, Germany); Ricardo Leon Lopez, David Pena Martinez and Oscar Perez Rafael (Universidad de El Salvador, El Salvador)

1570900899   Advanced Edge to Cloud System Architecture for Smart Real-Time Water Quality Monitoring Using Cutting-Edge Portable IoT Biosensor Devices
Marios Charalampides (Intracom Telecom, Greece); Theodoros Bozios (Intracom S.A. Telecom Solutions, Greece); Dimitrios Tsoukalas (National Technical University of Athens, Greece); Sotirios Ntouskas and Stavros Chatzandroulis (National Centre for Scientific Research Demokritos, Greece); Evangelos Skotadis and Evangelos Aslanidis (National Technical University of Athens, Greece); Themistoklis Sfetsas and Georgia Dimitropoulou (QLAB - Analytical Laboratory, Greece); George Tsekenis (Biomedical Research Foundation of the Academy of Athens, Greece); Georgios Samaras (Intracom Telecom, Greece)

1570907997   Failures to Food, Energy, and Water Systems: Mapping and Simulating Components to Improve Resilience
Alex Amir Modarresi (California State University Northridge, USA); John Symons (The University of Kansas, USA)

14:30 - 15:00

Demo Session

1570932047   Demonstration of Multi-Layer Internet of Things Platform With QoS Support
Kemal Serdaroglu (Yeditepe University, Turkey); Boonyarith Saovapakhiran (National Electronics and Computer Technology Center, Thailand); Zahra Esfandiari Baiat and Sebnem Baydere (Yeditepe University, Turkey); Chalermpol Charnsripinyo and Ferdy Mulyadi (National Electronics and Computer Technology Center, Thailand); Suat Ozdemir (Hacettepe University, Turkey)

15:00 - 17:30

Session Chair: *Dr. Kinan Ghanem (PNDC, Strathclyde University, Scotland, UK)*

Room: *Blue Hall / Rectorate Building 5th Floor*

- *Speaker: **James Irvine (PNDC/Strathclyde)**
  Title: Distribution Network Security: Lessons from the first 10 years of PNDC*

- *Speaker: **Francesco Pititto (Dell)**
  Title: Empowering the Grid: Exploring Secure Data Virtualization in Smart Grid for a Sustainable Future*

- *Speaker: **Mayamiko Hara (UKPN**)
  Title: Learnings from Designing a Smart Substation*

- *Speaker: **(Siemens)**
  Title: TBC*

- *Speaker: **Nigel Nawacki (Nokia**)
  Title: IEC 61850 and private LTE for ADMS*

- *Speaker: **Julian Stafford (EUTC/JRC)**
  Title: Overview of EUTC and JRC advocacy and standardisation activities for utility smart grids*

Day 2 – Wednesday, July 26, 2023

09:15 – 10:15

Keynote Speaker 2: **Prof. Kay Römer**

Title: Dependable Internet of Things for Safety-Critical Applications

Session Chair: *Prof. Sebnem Baydere (Yeditepe University, Türkiye)*

Room: *Blue Hall / Rectorate Building 5th Floor*

10:45 – 12:30

Session 6: AI/ML Techniques and System Engineering II
Session Chair: *Dr. Hashim Ali (Nazarbayev University, Kazakhstan)*

Room: *Blue Hall / Rectorate Building 5th Floor*

1570908811   A Web-Based Platform for Real-Time Speech Emotion Recognition Using CNN
Hashim Ali, Damir Kabdualiyev, Askar Madiyev, Adil Rakhaliyev, Balgynbek Dikhan and Kassymzhan Gizhduan (Nazarbayev University, Kazakhstan)

1570909848   'AI-Teacher' Assistant System: A Smart Attendance and Participation Tracking System for Students

Mouza Alzaabi, Mahra Almeheiri, Shuaa Alqubaisi, Ahmed Shuhaiber (Zayed University, United Arab Emirates)

1570909345   Sentiment Analysis of Using ChatGPT in Education
Mohammad Tubishat, Feras Al-Obeidat and Ahmed Shuhaiber (Zayed University, United Arab Emirates)

1570909391   A Smart Desk: A Smart Solution for Young Students
Ahmed Shuhaiber, Rund Hiyasat, Amjad Abuelsamen, Nasreen Ghanem, Mouza Alhammadi, Alreem Alghafri (Zayed University, United Arab Emirates)

1570876587   Emerging Role of Artificial Intelligence in Addressing the Electricity Crisis
Ndala Mulongo, Khathutshelo Mushavhanamadi (University of Johannesburg, South Africa)

1570876597   Prisma Analysis of New Technologies on Development of Optimized Manufacturing Strategies and Techniques
Khathutshelo Mushavhanamadi, Ndala Mulongo (University of Johannesburg, South Africa)

Session 7: Advances in Communications and Antenna Systems
Session Chair: *Dr. Mahmoud A. M. Albreem (University of Sharjah, United Arab Emirates)*

Room: *Red Hall / Rectorate Building 5th Floor*

1570901460   An Efficient Massive MIMO Detector Based on Deep Learning and Approximate Matrix Inversion Methods
Sam Ansari, Mahmoud A. M. Albreem, Ali Ahmad Sleiman, Ahmad Bassim Humaidi and Mohammed Eid Eid (University of Sharjah, United Arab Emirates)

1570905982   Wideband MIMO Antenna in the Shape of a Hand Grip
Hussein Mohammed Naser, Mahmood Farhan Mosleh and Oras Ahmed Al-Ani (Middle Technical University, Iraq); Hazem B Taher (University of Thi-Qar, Iraq)

1570906590   An Elliptical Folded Dipole With Directive Radiation for UWB Applications
Romain Gréard (University of Rennes, France); Mohamed Himdi (Université de Rennes 1, France); Dominique Lemur (IETR, Universite' de Rennes 1, France)

1570921303   A High-Capacity 4-Port MIMO Antenna for 5G and 6G Devices
Karrar Shakir Muttair (University of Kufa, Iraq & The Islamic University, Iraq); Oras Ahmed Al-Ani and Mahmood Farhan Mosleh (Middle Technical University, Iraq)

1570907233   Deep Learning Applications in MIMO Systems
Ali Jamal Almasadeh, Khawla Alnajjar and Mahmoud A. M. Albreem (University of Sharjah, United Arab Emirates)

Session 8: AI/ML Techniques and System Engineering III
Session Chair: *Dr. Mehmet G Bakal (Abdullah Gul University, Turkey)*

Room: *Green Hall / Rectorate Building 5th Floor*

1570892630   Extracting Insights From Big Source Code Repositories With Automatic Clustering of Projects by File Names and Types

Selin Metin and Yury Yakhno (NetRD Information Technologies and Telecommunication, Turkey)

1570892772   A Music Generation Scheme with Beat Weight Learning
Yuh-Shyan Chen (National Taipei University, Taiwan); Chih-Shun Hsu (Shih Hsin University, Taiwan); Fang-Yu Chang Chien (National Taipei University, Taiwan)

1570901178   A Transfer Learning Application on the Reliability of Psychological Drugs' Comments
Tarık Üveys Şen (Abdullah Gul, Turkey); Mehmet G Bakal (Abdullah Gul University, Turkey)

1570901367   Arabic Geo-Social Event Detection Using a Hybrid Learning Architecture
Imad Afyouni, Baraa Kakah and Maissan Bazazeh (University of Sharjah, United Arab Emirates)

1570913506   Machine Learning-Based Topology Optimization in 3D Printing
Md Hazrat Ali, Almira Askhatova, Yerlik Gabdulla, Amanali Bekbolat and Essam Shehab, CEng FIET (Nazarbayev University, Kazakhstan)

1570909687   Deep Privacy Based Face Anonymization for Smart City Applications
Muhammad Umair Hassan and Magnus Stava (Norwegian University of Science and Technology, Norway); Ibrahim A. Hameed (NTNU, Norway)

Session 9: Networks and Communications I
  Session Chair: *Dr. İbrahim Kök (Pamukkale University, Türkiye)*

  Room*: Taksim / Rectorate Building 1st Floor (1H03)*

1570894647   Optimal Configuration Method of Edge Computing Unit Considering Computing Load Balancing in Fault Location of Power Distribution Grid
Peng Wu and Wei Wang (State Grid Smart Grid Research Institute Co., Ltd., China); Lanxin Qiu (State Grid Zhejiang Supply Company, China); Yue Yu and Jiming Yao (State Grid Smart Grid Research Institute Co., Ltd., China)

1570906130   Generalized Framework for Protecting Privacy in the Smart Grid Environment and Measuring the Efficacy of Privacy Attacks
Mohammad Sahinur Hossen (New Mexico Institute of Mining and Technology, USA)

1570907671   Impact of a Web Based Crowdfunding Application for Renewable Energy Projects in Nigeria
Ayokunle Awelewa (Covenant University, Nigeria); Ojo Kayode Ebenezer (Bells University of Technology, Nigeria); Olawale Popoola (Tshwane University of Technology, South Africa); Ebubechi Ezenwanne (Quantic School of Business and Technology, United Kingdom (Great Britain)); Isaac Adekunle Samuel (Idiroko Road, Nigeria & Covenant University, Nigeria)

1570908538   Software Defined Networking (SDN) for Campus Networks, WAN, and Datacenter
Olubukola David, Paul Thornley and Maryam Bagheri (Sheffield Hallam University, United Kingdom (Great Britain))

1570892610   Distributed Personal OS Environments - Exploring Cooperative Fog Computing
Mathieu Boussard (Nokia Bell Labs, France); Pierre Peloso (Nokia, France); Vincent Verdot (Nokia Bell Labs, France); Richard Douville (Nokia Bell Labs France & Nokia, France); Nicolas Le Sauze (Nokia, France)

1570891884   Intelligent Mission Critical Services Over Beyond 5G Networks: Control Loop and Proactive Overload Detection

Sotirios Spantideas (National and Kapodistrian University of Athens & National Technical University of Athens, Greece); Anastasios E. Giannopoulos (National and Kapodistrian University of Athens, Greece & National Technical University of Athens, Greece); Marta Amor (Nemergent Solutions SL, Spain); Oscar Trullols-Cruces (NearbyComputing, Spain); Eneko Atxutegi (Nemergent Solutions SL, Spain); Panagiotis Trakadas (University of Athens, Greece)

Session 10: Advances in Communications and Networking
  Session Chair: *Prof. Gürhan Küçük (Yeditepe University, Türkiye)*

        Room: *Galata / Rectorate Building 1st Floor (1H04)*

1570896171   Fading Channel Classification With Walsh-Hadamard Transform and Convolutional Neural Network

Gianmarco Baldini (Joint Research Centre - European Commission, Italy); Fausto Bonavitacola (Energy Security, Distribution and Markets Unit, Joint Research Centre, EC, Italy); Jean Marc Chareau (Joint Research Centre of the European Commission, Italy)

1570907859   Low Complexity Scheduling and Phase Shift Optimization in RIS-Aided mmWave Downlink Transmission

Sertap Ünlü Cinalioglu (TOBB University of Economics and Technology, Spain); Tolga Girici (TOBB University of Economics and Technology, Turkey)

1570912321   Load-Aware Resource Scheduling in Fog Computing Based Delay-Sensitive IoT Networks

Lella Rajya Lakshmi (Birla Institute of Technology and Science Pilani, India)

1570906746   Optimizing Latency for Real-Time Traffic and Road Safety Applications Through MEC-Based V2X System

Annu Sahu, P. Rajalakshmi, Praveen Tammana (IIT HYDERABAD, India)

1570908728   On the Implementation of a Secure and Energetically Efficient NOC for Mobile Networks

Luís Miguel Mata (Instituto Superior Técnico & Instituto Superior de Engenharia de Lisboa, Portugal); Sinan Wannous (ISEP Gecad & ISEP, Portugal); David Duarte (CELFINET, a Cyient Company. Consultoria em Telecomunicações, S.A.); Eva Maia (ISEP Gecad & ISEP, Portugal); Pedro Vieira (Instituto de Telecomunicações / ISEL, Portugal); Isabel Praça (School of Engineering (ISEP) / Polytechnic Institute of Porto (IPP) & Knowledge Engineering and Decision Support Research Center (GECAD), Portugal)

1570896173   Specific Emitter Identification With Principal Component Analysis (PCA) Dimensionality Reduction and Convolutional Neural Network

Gianmarco Baldini (Joint Research Centre - European Commission, Italy); Fausto Bonavitacola (Energy Security, Distribution and Markets Unit, Joint Research Centre, EC, Italy)

14:00 – 15:00

        Keynote Speaker 3: **Prof. Paul Havinga**

        Title: Smart Sensing for a Better World

        ***Session Chair**: Prof. Suat Özdemir (Hacettepe University, Türkiye)*

Room: *Blue Hall / Rectorate Building 5th Floor*

15:15 – 16:45

Session 11: Networks and Communications II
Session Chair*: Dr. Omid Bushehrian (Shiraz University of Technology, Iran)*

Room: *Blue Hall / Rectorate Building 5th Floor*

1570892561   Energy-Aware Task Scheduling for Digital Twin Edge Networks in 6G
Elif Bozkaya (National Defence University Turkish Naval Academy, Turkey); Tuğçe Bilen (Turk Telekom, Turkey); Muge ErelOzcevik and Yusuf Ozcevik (Manisa Celal Bayar University, Turkey)

1570901243   Multi-Hop Precaching Scheme With Relaying in Intermittently Connected Vehicular Networks
Gayeong Kim (MNC, Korea (South)); Youngju Nam, Hyunseok Choi and Euisin Lee (Chungbuk National University, Korea (South))

1570891989   Data Offloading From LTE to Wi-Fi
Mustafa M Aljerbi, Ahmed Ashur and Nabil Naas (University of Tripoli, Libya)

1570892778   Q-Learning Algorithm Inspired Objective Function Optimization for IETF 6TiSCH Networks
Tayfun Bekar, Sedat Gormus, Burak Aydın and Hakan Aydın (Karadeniz Technical University, Turkey)

1570909525   Protocol Stack-Aware Comparison of Centroid Localization Algorithms Based on Anchor Density Using Cooja
İsmail Hakkı Turan (Ondokuz Mayıs Üniversitesi & Bordo IO, Turkey); Dogan Yildiz (Ondokuz Mayis University, Turkey); Sercan Demirci (Ondokuz Mayıs University, Turkey)

1570902003   A Novel Graph-Based Energy Efficient Sensor Selection Scheme in Edge Computing
Mohammad Soleimanikia and Omid Bushehrian (Shiraz University of Technology, Iran); Davood Mahmoodi (Shahrood University Of Technology & NIGC: National Iranian Gas Company, Iran)

1570936529   Location Aware Fog Computing Based Air Quality Monitoring System
Kemal Serdaroglu and Sebnem Baydere (Yeditepe University, Turkey); Boonyarith Saovapakhiran and Chalermpol Charnsripinyo (National Electronics and Computer Technology Center, Thailand)

Session 12: AI/ML Techniques and System Engineering IV
Session Chair: *Dr. Ahmed Shuhaiber (Zayed University, United Arab Emirates)*

Room: *Red Hall / Rectorate Building 5th Floor*

1570901952   A Computational Drug Repositioning Effort Using Patients' Reviews Dataset
Ali Akkaya and Mehmet G Bakal (Abdullah Gul University, Turkey)

1570909557   The Development of Smart E-Portfolio Generator System for University Students: An SDLC Approach
Ahmed Shuhaiber, Aysha Alkuwaiti, Mera Alremeithi, Hamda Almenhali (Zayed University, United Arab Emirates)

1570907847   **Wildfire Classification Using Infrared Unmanned Aerial Vehicle (UAV) Data With Convolutional Neural Networks**
Rahmi Arda Aral, Cemil Zalluhoğlu and Ebru Akcapınar Sezer (Hacettepe University, Turkey)

1570909332   **ML-Based Service Type Priority Decision Method Using Ambient Information for 5GB**
Umut Altunan (Eskisehir Osmangazi University, Turkey); Halenur Sazak (Sakarya University & Eskisehir Osmangazi University, Turkey); Ahmet Yazar (Eskisehir Osmangazi University, Turkey)

1570909855   **Robpha: A Robotic-Based Pharmacy for a Smart Hospital**
Lamya Almansoori, Fatima almusabi, Meera Alharbi, Ahmed Shuhaiber, Mohammad Tubishat (Zayed University, United Arab Emirates)

1570909506   **Explainable AI-Based Malicious Traffic Detection and Monitoring System in Next-Gen IoT Healthcare**
Ece Gürbüz, Özlem Turgut and İbrahim Kök (Pamukkale University, Turkey)

Session 13: Trust, Privacy and Security I
   Session Chair: *Dr. Ndala Mulongo (University of Johannesburg, South Africa)*

      Room: *Green Hall / Rectorate Building 5th Floor*

1570912061   **SATA M.2 on Forensics: Trim Function Effect on Recovering Permanently Deleted Files**
Amna Eleyan (MMU, United Kingdom (Great Britain)); Ruwa Fayeq Abu Hweidi (Palestine Technical University-Kadoorie (PTUK), Palestine); Mahmoud Jazzar (Palestine Technical University - Kadoorie, United Kingdom (Great Britain)); Tarek Bejaoui (University of Carthage, Tunisia)

1570890607   **Machine Learning With Bitcoin Heist Ransomware**
Nurhaliza Hassan (California State University Fullerton, USA); Kanika Sood (California State University, Fullerton, USA); Gabriel Suzuki (California State University Fullerton, USA)

1570908836   **Collaborative DDoS Attack Defense for OTA Updates in CAVs Using Hyperledger Fabric Blockchain**
Sadia Yeasmin (Western University, Canada); Anwar Haque (Western Ontario, Canada)

1570893093   **An Empirical Study on Utilizing Online k-Means Clustering for Intrusion Detection Purposes**
Remah Younisse Saleh Bani Younisse princess sumaya university for technology (Jordan); Qasem Abu Al-Haija (Princess Sumaya University for Technology (PSUT), Jordan)

1570910162   **Few-Shot Multi-Domain Knowledge Rearming for Context-Aware Defence Against Advanced Persistent Threats**
Gaolei Li (Shanghai Jiao Tong University, China); Yuanyuan Zhao (Hangzhou Normal University, China); Wenqi Wei (Fordham University, USA); Yuchen Liu (North Carolina State University, USA)

1570912063   **Forensics Investigation on Social Media Apps and Web Apps Messaging in Android Smartphone**

Amna Eleyan (MMU, United Kingdom (Great Britain)); Ruwa Fayeq Abu Hweidi (Palestine Technical University-Kadoorie (PTUK), Palestine); Mahmoud Jazzar (Palestine Technical University - Kadoorie, United Kingdom (Great Britain)); Tarek Bejaoui (University of Carthage, Tunisia)

Session 14: AI/ML Techniques for Healthcare and Smart Cities I
Session Chair: *Dr. Khathutshelo Mushavhanamadi (University of Johannesburg, South Africa)*

Room: *Galata / Rectorate Building 1st Floor (1H04)*

1570893713   A Comparative Study of Machine Learning Approaches for Heart Stroke Prediction
Madhab Chandra Das (University of Information Technology and Science, USA); Fatema Tabassum Liza (Florida State University, USA); Fariha Tabassum (Western Michigan University, USA); Partha Pratim Pandit, Sharmistha Bhattacharjee and Md Shakil Bin Kashem (Miami University, USA); Miraz Al Mamun (Christus Health, USA)

1570906135   Resource-Constrained Device Characterization for Detecting Sleep Apnea Using Machine Learning
Sayani Mallick (BITS Pilani, Goa Campus, India); Pranav Ruparel (BITS Pilani Goa Campus, India); Shubhangi Gawali (BITS PILANI GOA CAMPUS, INDIA, India); Neena Goveas (BITS Pilani K K Birla Goa Campus, India)

1570909207   Harnessing 5G Networks for Health Care: Challenges and Potential Applications
S M Abu Adnan Abir and Mohammed Abuibaid (Carleton University, Canada); Jun Steed Huang (Carleton University & University of Ottawa, Canada)

1570912290   Identification and Classification of Retinal Diseases by Using Deep Learning Models
Noor Basim and Hadeel Aljobouri (Al-Nahrain University, Iraq)

1570909236   The Application and Comparison of Deep Learning Models for the Prediction of Chest Cancer Prognosis
Mahadi Hasan (The University of Tennessee at Chattanooga, USA); Asm Mohaimenul Islam (University of South Dakota, USA); Madhab Chandra Das (University of Information Technology and Science, USA); Md Maruf Hasan (University of South Dakota, USA); Miraz Al Mamun (Christus Health, USA)

1570934590   Dynamic MAC Scheduling in O-RAN Using Federated Deep Reinforcement Learning
Halil Arslan (Hacettepe University, Turkey); Selim Yilmaz (Muğla Sıtkı Koçman University, Turkey); Sevil Sen (Hacettepe University, Turkey)

Day 3 – Thursday, July 27, 2023

09:30 – 10:30

Keynote Speaker 4: **Prof. Jon Crowcroft**

Title: Some Challenges of Scaling Federated Learning

Session Chair: *Prof. Sebnem Baydere (Yeditepe University, Türkiye)*

Room: *Blue Hall / Rectorate Building 5th Floor*

11:00 – 13:00

Session 15: Data Analytics and Smart Apps
Session Chair: *Dr. İbrahim Kök (Pamukkale University, Türkiye)*

Room: *Blue Hall / Rectorate Building 5th Floor*

1570912445 **Leveraging Generative AI Models for Synthetic Data Generation in Healthcare: Balancing Research and Privacy**
Aryan Jadon (Juniper Networks Inc, USA); Shashank Kumar (University of Florida, USA)

1570904418 **Blockchain for Ridesharing Networks: Systematic Literature Review**
Khadija Ramah (EABA, Tunisia); Dorra Machfar (Faculty of Science of Tunis University of Tunis El Manar, Tunisia)

1570912376 **Reducing Bootstrap Overhead Within VANET Blockchain Applications Through Pruning**
Edgar Wallace Bowlin III, Mohammad S Khan and Biju Bajracharya (East Tennessee State University, USA)

1570902809 **Aχon: IoT Attribute-Based Dynamic Connector for Emergency Applications**
Mohamad Ghandour (Lebanese University, Lebanon); Hamid Mcheick (University of Quebec at Chicoutimi, Canada); Mohamed Dbouk (Lebanese University - Doctoral School of Science and Technology, Lebanon)

1570902061 **Harnessing 5G Networks for Enhanced Precision Agriculture: Challenges and Potential Solutions**
Muhammad Anas Khan, Adeeb Khan and Mohammed Abuibaid (Carleton University, Canada); Jun Steed Huang (Carleton University & University of Ottawa, Canada)

Session 16: Advances in Engineering for Smart Cities and Apps
Session Chair: *Dr. Metehan Guzel (Kafkas University, Türkiye)*

Room: *Red Hall / Rectorate Building 5th Floor*

1570901248 **Residential College's Smart Restroom Monitoring System**
Fareesha Irdeena Azman, Ahmad Shukri bin Muhammad Noor and Shazmie Fazrin Fazdli (Universiti Putra Malaysia, Malaysia)

1570912077 **SARS CovidAID: Automatic Detection of SARS CoV-19 Cases From CT Scan Images With Pretrained Transfer Learning Model (VGG19, RESNet50 and DenseNet169) Architecture**
Afia Farjana (University of South Dakota, USA); Fatema Tabassum Liza (Florida State University, USA); Madhab Chandra Das (University of Information Technology and Science, USA); Md Maruf Hasan (University of South Dakota, USA); Miraz Al Mamun (Christus Health, USA)

1570909677 **Strategy for Community Empowerment Through an Integrated Waste Bank**
Muhammad Said Hasibuan (University Gadjah Mada & IBI Darmajaya, Indonesia); Dhedy Adi Nugroho (Coca-Cola Europacific Partners Indonesia, Indonesia); Sri Lestari (Institut Informatika dan Bisnis Darmajaya, Indonesia); Yayan Sopian (Coca-Cola Europacific Partners Indonesia, Indonesia)

1570901013 **A Platform for Monitoring Student Commuting in the Use of School Transport in Smart Cities - A Facial Recognition-Based Approach**
Jesse da Costa Rocha (Federal University of Pará (UFPA), Brazil); Marcela Alves Souza (Universidade Federal do Pará, Brazil); Evelin Helena Silva Cardoso (UFRA, Brazil); Nandamudi Lankalapalli

Vijaykumar (INPE - Instituto de Pesquisas Espaciais, Brazil); Jasmine Priscyla Leite de Araújo (Federal University of Pará, Brazil); Carlos Renato Francês (Universidade Fereral do Para, Brazil)

1570917421   PESS: Progress Enhancing Student Support
Nisha Thorakkattu Madathil (UAE University, United Arab Emirates); Saed Alrabaee (United Arab Emirates University, United Arab Emirates)

1570901951   Tweet Recommendation Using Clustered Bert and Word2vec Models
Surbhi Kakar and Deepali Dhaka (Jamia Millia Islamia University, India); Monica Mehrotra (Jamia Millia Islamia, India)

Session 17: Trust, Privacy and Security II
Session Chair: *Dr. Onur Demir (Yeditepe University, Türkiye)*

Room: *Green Hall / Rectorate Building 5th Floor*

1570908370   SPIDVerify: A Secure and Privacy-Preserving Decentralised Identity Verification Framework
Muhammad Shehu Abubakar Sadiq (University of Porto & Bayero University Kano, Portugal)

1570909894   Cybersecurity in Fitness Devices-A Systematic Literature Review
Tasneem M A Duridi (Palestine Technical University, Palestine); Amna Eleyan (MMU, United Kingdom (Great Britain)); Derar Eleyan (Palestine Technical University-Kadoorie, Palestine); Tarek Bejaoui (University of Carthage, Tunisia); Mahmoud Jazzar (Palestine Technical University - Kadoorie, United Kingdom (Great Britain))

1570902028   Li-IDS: An Approach Towards a Lightweight IDS for Resource-Constrained IoT
Mahawish Fatima and Osama M. Hussain Rehman (Bahria University, Pakistan); Ibrahim M. H Rehman (The Open Polytechnic of New Zealand, New Zealand)

1570889914   Analysis of Machine Learning Algorithms for Cyber Attack Detection in SCADA Power Systems
Mitchell Timken (San Diego State University, USA); Onat Gungor (University of California San Diego & San Diego State University, USA); Tajana Rosing (University of California, San Diego, USA); Baris Aksanli (San Diego State University, USA)

1570897942   BioEnvsense: A Usable Cybersecurity Framework for Critical Infrastructure
Farnaz Farid (Western Sydney University, Australia)

1570912057   A Machine Learning Framework & Development for Insider Cyber-Crime Threats Detection
Amna Eleyan (MMU, United Kingdom (Great Britain)); Rasheed Yousef (Palestine Technical University - Kadoorie, Palestine); Mahmoud Jazzar (Palestine Technical University - Kadoorie, United Kingdom (Great Britain)); Tarek Bejaoui (University of Carthage, Tunisia)

Session 18: AI/ML Techniques for Healthcare and Smart Cities II
Session Chair: *Dr. Chalermpol Charnsripinyo (NSTDA-NECTEC, Tailand)*

Room: *Galata / Rectorate Building 1st Floor (1H04)*

1570896133 **Indoor Navigation Assistance System for Visually Impaired With Semantic Segmentation Using EdgeTPU**
Victor Tran (California State University Fullerton, USA); Kanika Sood (California State University, Fullerton, USA); Kayhan Bakian and Aneesh Reddy Sannapu (California State University Fullerton, USA)

1570892525 **Edge-Based Battery Remaining Useful Life Estimation Using Deep Learning**
Christian Jay C Adducul, John Rufino I Macasaet and Nestor Michael C. Tiglao (University of the Philippines Diliman, Philippines)

1570901632 **Comparative Analysis of Machine Learning Methods for Multi-Year CVD Prediction**
Alfian Akbar Gozali (Telkom University, Indonesia)

1570902004 **Improved k-NN Regression Model Using Random Forests for Air Pollution Prediction**
Lella Rajya Lakshmi (Birla Institute of Technology and Science Pilani, India); Siddharth Sharma (Birla Institute of Technology and Science Pilani India, India)

1570904485 **Graph Neural Network Based Approach for Rumor Detection on Social Networks**
Daniel Hosseini and Rong Jin (California State University, Fullerton, USA)

1570892388 **Using Machine Learning and SEM to Analyze Attitudes Towards Adopting Metaverse in Higher Education**
Hussain Salman (University of Bahrain & UOB, Bahrain); Eman Almohsen and Tara Henari (University of Bahrain, Bahrain); Safan Mahmood Shatnawi (IREX, Jordan); Anwaar Buzaboon, Mohamed Fardan and Khawla Albinali (University of Bahrain, Bahrain)

1570892461 **Intellitell: A Web-Based Storytelling Platform for Emotion Recognition With Machine Learning**
Aaron Jay V. Argel, Madeleine M. Ragmac, Markus Elija Thomas E. Lindo and Nestor Michael C. Tiglao (University of the Philippines Diliman, Philippines)