

Technical Program

Opening and Welcome

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Conference Co-Chair: Magdy Bayoumi & Adam Drobot

S1: IoT Enabling Technologies

S1.1: IoT Enabling Technologies

Session Chairs: Prasanth Yanambak & Mahmoud Darwich

1028: Witness-Based Approach for Scaling Distributed Ledgers to Massive IoT Scenarios

Duc Lam Nguyen, Aalborg University, Denmark

Israel Leyva-Mayorga, Aalborg University, Denmark

Petar Popovski, Aalborg University, Denmark

1037: Low-Cost UFSOOK-Based Optical Camera Communication Link for IoT Applications

Abdelbaset Hamza, Appalachian State University, United States

Tyler Tripp, Appalachian State University, United States

Benjamen Underwood, Appalachian State University, United States

Rahman Tashakkori, Appalachian State University, United States

1103: A New Mobility Aware Duty Cycling and Dynamic Preambling Algorithm for Wireless Sensor Network

Craig Thomson, Edinburgh Napier University, United Kingdom

Isam Wadhaj, Edinburgh Napier University, United Kingdom

Ahmed Al-Dubai, Edinburgh Napier University, United Kingdom

Zhiyuan Tan, Edinburgh Napier University, United Kingdom

1130: Data Rate Enhancement for IEEE 802.15.4 Based FSK Transmission Scheme

Yueying Xiang, Kyoto University, Japan

Ryota Okumura, Kyoto University, Japan

Keiichi Mizutani, Kyoto University, Japan

Hiroshi Harada, Kyoto University, Japan

1137: Coexistence of Synchronous and Asynchronous MAC Protocols for Wireless IoT Systems in Sub-Gigahertz Band

Kiyoshi Mizutani, Kyoto University, Japan

Ryota Okumura, Kyoto University, Japan

Keiichi Mizutani, Kyoto University, Japan

Hiroshi Harada, Kyoto University, Japan

1152: Adaptive Strategy to Improve the Quality of Communication for IoT Edge Devices

Bharath Sudharsan, National University of Ireland Galway, Ireland

John Breslin, National University of Ireland Galway, Ireland

Muhammad Intizar Ali, National University of Ireland Galway, Ireland

1086: Evaluating Distinct Sensations by Modulating High-Frequency Electrotactile Pulses for Unobtrusive Communication with IoT Devices

Sina Parsnejad, Michigan State University, United States

Sylmarie Dávila-Montero, Michigan State University, United States

Andrew Mason, Michigan State University, United States

S1.2: IoT Technologies

Session Chairs: Mahmoud Darwich & Kasem Khalil

1232: Comparative Analysis of Depth Detection Algorithms Using Stereo Vision

Poluri Nikhil Koundinya, Indian Institute of Technology Hyderabad, India

Yuki Ikeda, Ritsumeikan University, Japan

Sanju Kumar NT, Indian Institute of Technology Hyderabad, India

Pachamuthu Rajalakshmi, Indian Institute of Technology Hyderabad, India

Takanori Fukao, Ritsumeikan University, Japan

1230: Enhanced LoRa Data Rate Through PATCH

Akshay Jadhav, Indian Institute of Technology Hyderabad, India

Pachamuthu Rajalakshmi, Indian Institute of Technology Hyderabad, India

1226: Geo-Referencing System for Locating Objects Globally in LiDAR Point Cloud

Mrinal Senapati, Indian Institute of Technology Hyderabad, India

Bhaskar Anand, Indian Institute of Technology Hyderabad, India

Vivek Barsaiyan, Indian Institute of Technology Hyderabad, India

Pachamuthu Rajalakshmi, Indian Institute of Technology Hyderabad, India

1234: Handwriting Tracking Using 60 GHz mmWave Radar

Sai Deepika Regani, University of Maryland, College Park / Origin Wireless Inc., United States

Chenshu Wu, University of Maryland, College Park / Origin Wireless Inc, United States

Feng Zhang, University of Maryland, College Park / Origin Wireless Inc., United States

Beibei Wang, University of Maryland, College Park / Origin Wireless Inc., United States

Min Wu, University of Maryland, College Park / Origin Wireless Inc., United States

K. J. Ray Liu, University of Maryland, College Park / Origin Wireless Inc., United States

1290: SemSub: Semantic Subscriptions for the MQTT Protocol

Tobias Christian Piller, Landshut University of Applied Sciences, Germany

Abdelmajid Khelil, Landshut University of Applied Sciences, Germany

1296: Sensing Systemic Awareness and Performance of Teams During Model-Based Site Design

Prakash Manandhar, Massachusetts Institute of Technology, United States

Keran Rong, Massachusetts Institute of Technology, United States

Katherine Carroll, Massachusetts Institute of Technology, United States

Roland de Filippi, Massachusetts Institute of Technology, United States

Ira Winder, Massachusetts Institute of Technology, United States

Jeff Dieffenbach, Massachusetts Institute of Technology, United States

Bryan Moser, Massachusetts Institute of Technology, United States

1298: Frequency-Based Power Efficiency Improvement of CNNs on Heterogeneous IoT Computing Systems

Ioannis Galanis, Southern Illinois University, United States
Ourania Spantidi, Southern Illinois University, United States
Iraklis Anagnostopoulos, Southern Illinois University, United States

S1.3: IoT Technologies

Session Chairs: Kasem Khalil & Ahmed Abdelgawad

1051: Satellite Guided Mobile Wireless Methane Detection for Oil and Gas Operations

Theodore van Kessel, IBM, United States
Levente Klein, IBM, United States
Muralidhar Ramachandran, IBM, United States
Eric Zhang, IBM, United States
Hendrik Hamann, IBM, United States

1121: Knowledge Graph in Data Quality Evaluation for IoT Applications

Igor Khokhlov, Rochester Institute of Technology, United States
Leon Reznik, Rochester Institute of Technology, United States

1104: Data-Driven Model-Predictive Communication for Resource-Efficient IoT Networks

Christian Arendt, Technical University of Dortmund, Germany
Stefan Böcker, Technical University of Dortmund, Germany
Christian Wietfeld, Technical University of Dortmund, Germany

1220: A Sleep-Scheduling Oil Detection Routing Protocol for Smart Oceans Using Internet of Things

Aoun Hussain, Habib University, Pakistan
Georges El-Howayek, Valparaiso University, United States

1243: Comparative Analysis on the Scaling Properties of Arbiter-Based PUFs

Pablo Rojas, University of Louisiana at Lafayette, United States
Haytham Idriss, University of Louisiana at Lafayette, United States
Magdy Bayoumi, University of Louisiana at Lafayette, United States

1250: Towards a Distributed Estimator in Smart Home Environment

Olumide Kayode, University of Texas at San Antonio, United States
Deepti Gupta, University of Texas at San Antonio, United States
Ali Saman Tosun, University of Texas at San Antonio, United States

1301: Memory-Based Arbiter PUF: a Novel Highly Reliable and Scalable Strong PUF Design

Haytham Idriss, University of Louisiana at Lafayette, United States
Tarek Idriss, Western Washington University, United States
Phillip Williams, University of Louisiana at Lafayette, United States
Magdy Bayoumi, University of Louisiana at Lafayette, United States

S2: IoT Application and Services

S2.1: IoT Application and Services

Session Chairs: Jaeseung Song & Haytham Idriss

1021: Smart Parking for Disabled Parking Improvement Using RFID and Database Authentication

Abdel-Shakour Abuzneid, University of Bridgeport, United States
Zainab Al Taweel, University of Bridgeport, United States
Lavanya Challagundla, University of Bridgeport, United States
Alexander Pagán Jr., University of Bridgeport, United States

1026: Human Centric IoT Lighting Control Based on Personalized Biological Clock Estimations

Charikleia Papatsimpa, Eindhoven University of Technology, Netherlands
Jochem Bonarius, Eindhoven University of Technology, Netherlands
Jean-Paul Linnartz, Eindhoven University of Technology, Netherlands

1048: IoT for Commercial Smart Lighting: a Reality Check and Reference Architecture

Markus Jung, OSRAM GmbH, Germany
Jiye Park, University of Duisburg-Essen, Germany
Prajosh Premdas, OSRAM GmbH, Germany
Volker Kamp, OSRAM GmbH, Germany
Yuting Zhang, OSRAM Sylvania, United States
Yang Li, OSRAM Sylvania, United States
Bernhard Sießegger, OSRAM GmbH, Germany

1108: Throughput Enhancement in UAV-Aided Wireless Sensor Networks via Wake-Up Radio Technology and Priority-Based MAC Scheme

Angelo Trotta, University of Bologna, Italy
Marco Di Felice, University of Bologna, Italy
Luciano Bononi, University of Bologna, Italy
Luca Perilli, University of Bologna, Italy
Eleonora Franchi Scarselli, University of Bologna, Italy
Tullio Salmon Cinotti, University of Bologna, Italy

1117: Cost-Effective Multi-Modal Urban Transportation with Parking Selection

Moussa Coulibaly, University Hassan II Casablanca, Morocco
Ahmed Errami, University of Hassan II Casablanca, Morocco
Essaid Sabir, University of Hassan II Casablanca, Morocco

1118: Demand Response for Residential Uses: a Data Analytics Approach

Abdelkareem Jaradat, University Of Western Ontario, Canada
Hanan Lutfiyya, University Of Western Ontario, Canada
Anwar Haque, University Of Western Ontario, Canada

S2.2: IoT Application and Services

Session Chairs: Prasanth Yanambaka & Zag ElSayed

1119: V-PRISM: an Edge-Based IoT Architecture to Virtualize Multimedia Sensors

Anselmo Luiz Éden Battisti, Universidade Federal Fluminense, Brazil

Débora Christina Muchaluat-Saade, Universidade Federal Fluminense, Brazil

Flávia Coimbra Delicato, Universidade Federal Fluminense, Brazil

1135: Image Processing in Autonomous Vehicle Model Positioning and Movement Control

Sergey Chuprov, ITMO University, Russia

Egor Marinenkov, ITMO University, Russia

Ilya Viksnin, ITMO University, Russia

Leon Reznik, Rochester Institute of Technology, United States

Igor Khokhlov, Rochester Institute of Technology, United States

1147: The Effect of Deceiving Vehicles in an Autonomous Intersection

Javier Mauricio Morales Chavarro, Universidad Nacional de Colombia, Colombia

Ewan Colman, University of Edinburgh, United Kingdom

Luis Fernando Niño Vásquez, Universidad Nacional de Colombia, Colombia

1173: IGaaS: an IoT Gateway-as-a-Service for On-Demand Provisioning of IoT Gateways

Ragib Hasan, University of Alabama at Birmingham, United States

Mohammad Aminul Hoque, University of Alabama at Birmingham, United States

Mahmud Hossain, University of Alabama at Birmingham, United States

1189: From Smart to Intelligent Utility Meters in Natural Gas Distribution Networks

Ghaith Matakah, Georgia Institute of Technology, United States

Edward Coyle, Georgia Institute of Technology, United States

1197: Deep Learning for Optimal Resource Allocation in IoT-Enabled Additive Manufacturing

Sergio Salinas Monroy, Wichita State University, United States

Farshad Mashhadi, Wichita State University, United States

S2.3: Multi-disciplinary Applications of IoT Frameworks

Session Chairs: Prabha Sundaravadive & Premananda Indic

1251: Affect-Learn: an IoT-Based Affective Learning Framework for Special Education

Prabha Sundaravadivel, University of Texas at Tyler, United States

Ghazal Yadav, Independence High School, United States

Lokeshwar Kesavan, Independent Researcher, United States

1253: M-SID: an IoT-Based Edge-Intelligent Framework for Suicidal Ideation Detection

Prabha Sundaravadivel, University of Texas at Tyler, United States

Paola Salvatore, McLean Hospital, United States

Premananda Indic, University of Texas at Tyler, United States

1297: Advanced Evaluation Platform-Based RF Attenuators for Wireless Sensor Networks

Ilef Ketata, Leipzig University of Applied Sciences, Germany
Ahmed Fakhfakh, Digital Research Center of Sfax, Tunisia
Faouzi Derbel, Leipzig University of Applied Sciences, Germany

1074: Unscented Kalman Filter for Indoor Bluetooth Voice Transmission Interference Over Non-Gaussian Fading Channel

Ali S. Alghamdi, Majmaah University, Saudi Arabia
Kun Hua, Lawrence Technological University, United States
Mohamed Zohdy, Oakland University, United States
Abdullah Al-Ahmadi, Majmaah University, Saudi Arabia
Ahmed G. Abo-Khalil, Majmaah University, Saudi Arabia
Yazeed Qasaymeh, Majmaah University, Saudi Arabia

1217: Multi-Dimensional Integration and Packaging of Devices for Internet-of-Things Applications

Nazek El-Atab, King Abdullah University of Science and Technology, Saudi Arabia
Reem Suwaidan, King Abdullah University of Science and Technology, Saudi Arabia
Yara Alghamdi, King Abdullah University of Science and Technology, Saudi Arabia
Alhanouf Alhazzany, King Abdullah University of Science and Technology, Saudi Arabia
Reema Almansour, King Abdullah University of Science and Technology, Saudi Arabia
Sohail F. Shaikh, King Abdullah University of Science and Technology, Saudi Arabia
Sherjeel M. Khan, King Abdullah University of Science and Technology, Saudi Arabia
Muhammad Mustafa Hussain, King Abdullah University of Science and Technology / University of California Berkeley, Saudi Arabia

S2.4: IoT based Consumer Technologies for Smart Cities

Session Chairs: Saraju Mohanty & Himanshu Thapliyal

1053: Krig-Detect: Exploring Alternative Kriging Methods for Real-Time Seizure Detection from EEG Signals

Saraju Mohanty, University of North Texas, United States
Ibrahim Olokodana, University of North Texas, United States
Elias Kougianos, University of North Texas, United States

1061: Towards Reverse Engineering Controller Area Network Messages Using Machine Learning

Clinton Young, Iowa State University, United States
Jordan Svoboda, Iowa State University, United States
Joseph Zambreno, Iowa State University, United States

1100: Secure CAN for Connected Vehicles

Akhilesh Tyagi, Iowa State University, United States
Timothy Dee, Iowa State University, United States

1140: Kriging-Bootstrapped DNN Hierarchical Model for Real-Time Seizure Detection from EEG Signals

Saraju Mohanty, University of North Texas, United States
Ibrahim Olokodana, University of North Texas, United States
Elias Kougianos, University of North Texas, United States

1143: iGLU 1.1: Towards a Glucose-Insulin Model Based Closed Loop IoMT Framework for Automatic Insulin Control of Diabetic Patients

Amit Joshi, Malaviya National Institute of Technology, India
Prateek Jain, Malaviya National Institute of Technology, India
Saraju Mohanty, University of North Texas, India

1200: Reinforcement Learning Toward Decision-Making for Multiple Trusted-Third-Parties in PUF-Cash

Jim Plusquellic, University of New Mexico, United States
Georgios Fragkos, University of New Mexico, United States
Cyrus Minwalla, Bank of Canada, United States
Eirini Eleni Tsiropoulou, University of New Mexico, United States

S2.5: IoT based Consumer Technologies for Smart Cities

Session Chairs: Deepak Puthal & Saraju Mohanty

1206: A Trusted Authentication Scheme for IoT-Based Smart Grid Applications

Selçuk Köse, University of Rochester, United States
Fathi Amsaad, Eastern Michigan University, United States

1244: Towards Designing a Sustainable Green Smart City Using Bluetooth Beacons

Ragib Hasan, University of Alabama at Birmingham, United States
Raiful Hasan, University of Alabama at Birmingham, United States

1278: 2-Phase Energy-Efficient Secure Positive Feedback Adiabatic Logic for CPA-Resistant IoT Devices

Himanshu Thapliyal, University of Kentucky, United States
Zachary Kahleifeh, University of Kentucky, United States

1279: PPG Based Continuous Blood Pressure Monitoring Framework for Smart Home Environment

Himanshu Thapliyal, University of Kentucky, United States
Rajdeep Nath, University of Kentucky, United States

1277: Enhanced Activity Recognition of the IoT Smart Home Users Through Cluster Analysis

Prabhat Mishra, Samsung R&D Institute Bangalore, India
Shiva Busetty, Samsung R&D Institute Bangalore, India
Suresh Gudla, Walmart Labs, India

S2.6: IoT for Emergency Response and Disaster Recovery

Session Chairs: Niranjan Suri & Frank Johnsen

1209: Sensor Driven Priority Routing of Health Care Data Packet in IoT Network

Kedir Mamo Beshir, University of Texas at Dallas, United States

Sara Beitelspacher, University of Texas at Dallas, United States

Mohammed Ali, University of Texas at Dallas, United States

1247: Deployment Architecture for Accessing Smart City and Coalition Assets for Multi-Agency HADR Operations

Manas Pradhan, Fraunhofer FKIE, Germany

Christoph Fuchs, Fraunhofer FKIE, Germany

Joseph Noll, University of Oslo, Norway

1211: Passive People Counting Using Commodity WiFi

Fengyu Wang, University of Maryland, College Park / Origin Wireless Inc., United States

Feng Zhang, University of Maryland, College Park / Origin Wireless Inc., United States

Chenshu Wu, University of Maryland, College Park / Origin Wireless Inc., United States

Beibei Wang, University of Maryland, College Park / Origin Wireless Inc., United States

K. J. Ray Liu, University of Maryland, College Park / Origin Wireless Inc., United States

S2.7: IoT and Public Safety

Session Chairs: Prasanth Yanambaka & Ahmed Abdelgawad

1113: Internet-of-Things-Based Smart Transportation Systems for Safer Roads

Mohammad Derawi, Norwegian University of Science and Technology, Norway

Yaser Dalveren, Norwegian University of Science and Technology, Norway

Faouzi Alaya Cheikh, Norwegian University of Science and Technology, Norway

1299: Using Traces from IoT Devices to Solve Criminal Cases

João Marcos Do Valle, Federal University of Rio Grande do Norte, Brazil

Gabriel Souza, Federal University of Rio Grande do Norte, Brazil

Nélio Cacho, Federal University of Rio Grande do Norte, Brazil

Iaslan Silva, Federal University of Rio Grande do Norte, Brazil

Jaine Budke, Federal University of Rio Grande do Norte, Brazil

Henrique Sales, Federal University of Rio Grande do Norte, Brazil

Frederico Lopes, Federal University of Rio Grande do Norte, Brazil

Daniel Araújo, Federal University of Rio Grande do Norte, Brazil

Rivaldo Silva Junior, Ministério Público do Rio Grande do Norte, Ministério Público do Rio Grande do Norte

1300: SIGOc: a Smart Campus Platform to Improve Public Safety

Ícaro França, Federal University of Rio Grande do Norte, Brazil

Natanael Araújo, Federal University of Rio Grande do Norte, Brazil

Abmael Gomes, Federal University of Rio Grande do Norte, Brazil

Nélio Cacho, Federal University of Rio Grande do Norte, Brazil

Frederico Lopes, Federal University of Rio Grande do Norte, Brazil

José Lima, Federal University of Rio Grande do Norte, Brazil

Eiji Adachi, Federal University of Rio Grande do Norte, Brazil

1227: An IoT Based Efficient Waste Collection System with Smart Bins

Khandaker Foysal Haque, Central Michigan University, United States

Rifat Zabin, Chittagong University of Engineering and Technology, Bangladesh

Kumar Yelamarthi, Central Michigan University, United States

Venkata Prasanth Yanambaka, Central Michigan University, United States

Ahmed Abdelgawad, Central Michigan University, United States

1238: Increasing Safety and Security in Public Places Using IoT Devices

Christos Chatzigeorgiou, University of West Attica, Greece

Michael Feidakis, University of West Attica, Greece

Dimitrios Kogias, iTrack Services Ltd., Greece

Charalampos Patrikakis, University of West Attica, Greece

S2.8: IoT & AI Technologies: Embedded Solutions for Future Automotive Systems

Session Chairs: Jürgen Becker & Florian Oszwald

1276: A Video-Based Vehicle Counting System Using an Embedded Device in Realistic Traffic Conditions

Markus Luecking, FZI Research Center for Information Technology, Germany

Esteban Rivera, FZI Research Center for Information Technology, Germany

Lukas Kohout, FZI Research Center for Information Technology, Germany

Christoph Zimmermann, FZI Research Center for Information Technology, Germany

Duygu Polad, SAP SE, Germany

Wilhelm Stork, Karlsruhe Institute of Technology, Germany

1291: Embedded Image Processing the European Way: a New Platform for the Future Automotive Market

Tim Hotfilter, Karlsruhe Institute of Technology, Germany

Fabian Kempf, Karlsruhe Institute of Technology, Germany

Jürgen Becker, Karlsruhe Institute of Technology, Germany

Dominik Reinhardt, BMW AG, Germany

Imen Baili, Menta eFPGA S.A.S, France

1308: Towards Safety in Automotive Ethernet-Based Networks with Dynamic Workloads

Adam Kostrzewa, Technical University of Braunschweig, Germany

Dominik Stöhrmann, Technical University of Braunschweig, Germany

Rolf Ernst, Technical University of Braunschweig, Germany

1004: Exploring the Suitability of BLE Beacons to Track Poacher Vehicles in Harsh Jungle Terrains

Charith Perera, Cardiff University, United Kingdom

Karan Juj, Cardiff University, United Kingdom

1283: Autonomous Vehicles: Building a Test-Bed Prototype at a Controlled Environment

Samy El-Tawab, James Madison University, United States

Nathan Sprague, James Madison University, United States

Azeem Mufti, James Madison University, United States

1289: Region of Interest and Car Detection Using LiDAR Data for Advanced Traffic Management System

Mrinal Senapati, Indian Institute of Technology Hyderabad, India

Bhaskar Anand, Indian Institute of Technology Hyderabad, India

Vivek Barsaiyan, Indian Institute of Technology Hyderabad, India

Pachamuthu Rajalakshmi, Indian Institute of Technology Hyderabad, India

S3: Security and Privacy for Internet of Things

S3.1: Security and Privacy for Internet of Things

Session Chairs: Soumya Datta & Ahmed Abdelgawad

1020: Testbed Validation of Security-Aware Channel Assignment in Cognitive Radio IoT Networks

Monette Khadr, State University of New York at Albany, United States
Haythem Salameh, Al Ain University of Science and Technology, U.A.E.
Moussa Ayyash, Lewis University, United States
Sufyan Almajali, Princess Sumaya University for Technology, Jordan
Hany Elgala, State University of New York at Albany, United States

1023: Context Aware Family Dynamics Based Internet of Things Access Control Towards Better Child Safety

Charith Perera, Cardiff University, United Kingdom
Yasar Majib, Cardiff University, United Kingdom

1031: Detecting Interference in Wireless Sensor Network Received Samples: a Machine Learning Approach

George O'Mahony, University College Cork, Ireland
Philip J. Harris, United Technologies Corporation, Ireland
Colin C. Murphy, University College Cork, Ireland

1032: SHAKE: SHared Acceleration Key Establishment for Resource-Constrained IoT Devices

Xenofon Fafoutis, Technical University of Denmark, Denmark
Emil Bejder, Technical University of Denmark, Denmark
Adam Krog Mathiasen, Technical University of Denmark, Denmark
Michele De Donno, Technical University of Denmark, Denmark
Nicola Dragoni, Technical University of Denmark, Denmark

1038: Kalki: a Software-Defined IoT Security Platform

Grace Lewis, Carnegie Mellon Software Engineering Institute, United States
Sebastian Echeverría, Carnegie Mellon Software Engineering Institute, United States
Craig Mazzotta, Carnegie Mellon Software Engineering Institute, United States
Christopher Grabowski, Carnegie Mellon Software Engineering Institute, United States
Kyle O'Meara, Carnegie Mellon Software Engineering Institute, United States
Amit Vasudevan, Carnegie Mellon Software Engineering Institute, United States
Marc Novakouski, Carnegie Mellon Software Engineering Institute, United States
Matthew McCormack, Carnegie Mellon University, United States
Vyas Sekar, Carnegie Mellon University, Carnegie Mellon University

1057: LPA-SDP: a Lightweight Privacy-Aware Service Discovery Protocol for IoT Environments

Khalid Elgazzar, University of Ontario Institute of Technology, Canada
Mohamed Seliem, University of Louisiana at Lafayette, United States

1097: A Security Approach for CoAP-Based Internet of Things Resource Discovery

Kasem Khalil, University of Louisiana at Lafayette, United States
Khalid Elgazzar, University of Ontario Institute of Technology, Canada
Ahmed Abdelgawad, Central Michigan University, United States
Magdy Bayoumi, University of Louisiana at Lafayette, United States

S3.2: Security and Privacy for Internet of Things

Session Chairs: Yasser Ismail & Ahmed Abdelgawad

1096: RIoTS: Risk Analysis of IoT Supply Chain Threats

Timothy Kieras, New York University, United States
Muhammad Junaid Farooq, New York University, United States
Quanyan Zhu, New York University, United States

1126: Lightweight Polymorphic Encryption for the Data Associated with Constrained Internet of Things Devices

Indira Kalyan Dutta, University of Louisiana at Lafayette, United States
Bhaskar Ghosh, University of Louisiana at Lafayette, United States
Albert H. Carlson, CipherLoc Corporation, United States
Magdy Bayoumi, University of Louisiana at Lafayette, United States

1158: “Is Your Smart Home a Secure Home?” - Analysis of Smart Home Breaches and an Approach for Vulnerability Analysis and Device Isolation

Gokila Dorai, Florida State University, United States
Eleson Williams, Florida A&M University, United States
Hongmei Chi, Florida A&M University, United States
Richard A. Alo, Florida A&M University, United States

1160: Deep Q-Network for Enhanced Data Privacy and Security of IoT Traffic

Olumide Kayode, University of Texas at San Antonio, United States
Ali Saman Tosun, University of Texas at San Antonio, United States

1186: Securing Mobile IoT with Unmanned Aerial Systems

Aly Sabri Abdalla, Mississippi State University, United States
Bodong Shang, Virginia Polytechnic Institute and State University, United States
Vuk Marojevic, Mississippi State University, United States
Lingjia Liu, Virginia Polytechnic Institute and State University, United States

1249: Security Aspects of Internet of Things – a Survey

Phillip Williams, University of Louisiana at Lafayette, United States
Indira Kalyan Dutta, University of Louisiana at Lafayette, United States
Hisham Daoud, University of Louisiana at Lafayette, United States
Magdy Bayoumi, University of Louisiana at Lafayette, United States

S3.3: Workshop on Security & Privacy for Internet of Things & Cyber-Physical Systems

Session Chairs: Tarek Elarabi & Zag ElSayed

1258: iMAC: Implicit Message Authentication Code for IoT Devices

Ikram Ullah, University of Twente, Netherlands

Nirvana Meratnia, University of Twente, Netherlands

Paul Havinga, University of Twente, Netherlands

1164: The Importance of Security in Cyber-Physical System

Faisal Alrefaei, Embry-Riddle Aeronautical University, United States

1265: Cloud Based Cyber Physical System for Factory Automation

Ossamah Almotery, Embry-Riddle Aeronautical University, United States

Meshari Almutairi, Embry-Riddle Aeronautical University, United States

Yazed Alferaih, Embry-Riddle Aeronautical University, United States

Norah Alilwit, Embry-Riddle Aeronautical University, United States

1266: Blockchain as a Solution to Drone Cybersecurity

Ossamah Almotery, Embry-Riddle Aeronautical University, United States

S4: IoT Experimental Results and Deployment Scenarios

S4: IoT Experimental Results and Deployment Scenarios

Session Chairs: Mahmoud Darwich & Mohamed Shaban

1010: Decentralized IoT with Wattsworth

John Donnal, US Naval Academy, United States
Ryan McDowell, Rockbridge Academy, United States
Michael Kutzer, US Naval Academy, United States

1095: Comparison of Sensor-Based Datasets for Human Activity Recognition in Wearable IoT

Shivanjali Khare, University of Louisiana at Lafayette, United States
Sayani Sarkar, University of Louisiana at Lafayette, United States
Michael Totaro, University of Louisiana at Lafayette, United States

1101: Ranging Capabilities of LoRa 2.4 GHz

Frederik Rander Andersen, Technical University of Denmark, Denmark
Kalpit Dilip Ballal, Technical University of Denmark, Denmark
Martin Nordal Petersen, Technical University of Denmark, Denmark
Sarah Ruepp, Technical University of Denmark, Denmark

1111: An Experimental Evaluation of Energy Trade-Offs in Narrowband IoT

Guus Leenders, Katholieke Universiteit Leuven, Belgium
Gilles Callebaut, Katholieke Universiteit Leuven, Belgium
Liesbet Van der Perre, Katholieke Universiteit Leuven, Belgium
Lieven De Strycker, Katholieke Universiteit Leuven, Belgium

1124: Good Vibrations: an IoT Testbed for Infotainment in a Football Stadium

Edward Coyle, Georgia Institute of Technology, United States
Henghao Li, Georgia Institute of Technology, United States
Pedro Pinto, Georgia Institute of Technology, United States
Deepa Phanish, Cox Communications, United States
Randal Abler, Georgia Institute of Technology, United States

1134: CarnegiePLUG: Prosumer-in-the-Loop Simulation Grid

Javad Mohammadi, Carnegie Mellon University, United States
Juye Kim, Carnegie Mellon University, United States
Carolyn Goodman, Carnegie Mellon University, United States

1080: Low-Cost Wireless Testbed for Internet of Things Ad Hoc Networks Prototyping and Evaluation

Paulo Alexandre Regis, Southeastern Louisiana University, United States
Amar Nath Patra, University of Nevada Reno, United States
Shamik Sengupta, University of Nevada Reno, United States

S5: RFID, Sensors and Actuators

S5.1: RFID, Sensors, and Actuators

Session Chairs: Elfed Lewis & Omar Khaled

1050: Integrating a Traffic Preemption System on an Emergency Vehicle and Airport Runway System

Gideon Eromosele, University of Regina, Canada

David Gerhard, University of Regina, Canada

1065: A 10.5 μ W Programmable SAR ADC Frontend with SC Preamplifier for Low-Power IoT Sensor Nodes

Marcel Jotschke, Fraunhofer EAS/IIS, Germany

Wilmar Carvajal Ossa, Fraunhofer EAS/IIS, Germany

Torsten Reich, Fraunhofer EAS/IIS, Germany

Christian Mayr, Technische Universitaet Dresden, Germany

1166: Temperature Calibration on a Crystal-Free Mote

Titan Yuan, University of California, Berkeley, United States

Filip Maksimovic, University of California, Berkeley, United States

David C. Burnett, University of California, Berkeley, United States

Brad Wheeler, University of California, Berkeley, United States

Lydia Lee, University of California, Berkeley, United States

Kristofer S.J. Pister, University of California, Berkeley, United States

1169: Middleware Support for Generic and Flexible Actuation in the Internet of Mobile Things

Markus Endler, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

Sheriton R. Valim, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

Felipe Nogueira, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

Flávia Pisani, Pontifícia Universidade Católica do Rio de Janeiro, Brazil

1181: A Comparison of Axiomatic Distance-Based Collective Intelligence Methods for Wireless Sensor Network State Estimation in the Presence of Information Injection

Joshua Kyle Skolfield, Arizona State University, United States

Romena Yasmin, Arizona State University, United States

Adolfo Escobedo, Arizona State University, United States

Lauren Huie, Air Force Research Laboratory, United States

1064: A Read Range Maximization Approach for UWB Surface Acoustic Wave (SAW) RFID Tags Based on Interdigital Transducer (IDT) as a Reflector

Kasyap Suresh, Universiti Teknologi Petronas, Malaysia

Varun Jeoti, Universiti Teknologi Petronas, Malaysia

Micheal Drieberg, Universiti Teknologi Petronas, Malaysia

S5.2: Energy Aware Autonomous Sensors for IoT

Session Chairs: Olfa Kanoun & Prabha Sundaravadive

1224: Smart-Lab: Design and Implementation of an IoT-Based Laboratory Platform

Sabrina Khriji, Technische Universität Chemnitz, Germany
Dhouha El Houssaini, Technische Universität Chemnitz, Germany
Rim Barioul, Technische Universität Chemnitz, Germany
Talha Rehman, Technische Universität Chemnitz, Germany
Olfa Kanoun, Technische Universität Chemnitz, Germany

1261: A Secure and Efficient Login and Data Exchange Scheme for an IoT Laboratory Management System

Dhouha El Houssaini, Technische Universität Chemnitz, Germany
Sabrina Khriji, Technische Universität Chemnitz, Germany
Muhammad Waseem Mukhtar, Technische Universität Chemnitz, Germany
Faouzi Derbel, Leipzig University of Applied Sciences, Germany
Kamel Besbes, Faculté des Sciences de Monastir, Tunisia
Olfa Kanoun, Technische Universität Chemnitz, Germany

1285: Microcontrollers for IoT: Optimizations, Computing Paradigms, and Future Directions

Rym Chéour, Ecole Nationale d'Ingénieurs de Sfax, Tunisia
Sabrina Khriji, Technische Universität Chemnitz, Germany
Mohamed Abid, Ecole Nationale d'Ingénieurs de Sfax, Tunisia
Olfa Kanoun, Technische Universität Chemnitz, Germany

1293: Smart Multi-Coil Inductive Power Transmission with IoT Based Visualization

Ghada Bouattour, Technische Universität Chemnitz, Germany
Zheng Hu, Technische Universität Chemnitz, Germany
Houda Ben Jmeaa Derbel, Faculty of Science of Sfax, Tunisia
Olfa Kanoun, Technische Universität Chemnitz, Germany

1294: Electromagnetic Energy Harvester for Battery-Free IoT Solutions

Ghada Bouattour, Technische Universität Chemnitz, Germany
Sonia Bradai, Technische Universität Chemnitz, Germany
Slim Naifar, Technische Universität Chemnitz, Germany
Olfa Kanoun, Technische Universität Chemnitz, Germany

1295: Design of a DC-DC Boost Converter of Hybrid Energy Harvester for IoT Devices

Meriam Ben Ammar, Technische Universität Chemnitz, Germany
Salwa Sahnoun, Digital Research Center of Sfax, Tunisia
Ahmed Fakhfakh, Digital Research Center of Sfax, Tunisia
Olfa Kanoun, Technische Universität Chemnitz, Germany

1219: Accurate Stride Length Estimation via Fused Radio and Inertial Sensing

Chenshu Wu, University of Maryland, College Park / Origin Wireless Inc, United States
K. J. Ray Liu, University of Maryland, College Park / Origin Wireless Inc., United States

S6: Power and Energy for IoT

S6.1: Power and Energy for IoT

Session Chairs: Kumar Yelamarthi & Omar Khaled

1027: Energy Consumption Evaluation of Cellular Narrowband Internet of Things (NB-IoT) Modules

Ahmed Elhaddad, Friedrich-Alexander University Erlangen-Nuremberg, Germany
Heiko Bruckmeyer, Friedrich-Alexander University Erlangen-Nuremberg, Germany
Markus Hertlein, Friedrich-Alexander University Erlangen-Nuremberg, Germany
Georg Fischer, Friedrich-Alexander University Erlangen-Nuremberg, Germany

1049: Communication Energy and Protocol Considerations in IoT Deployments

Elizabeth Liri, University of California, Riverside, United States
Natasha Orié, University of California, Riverside, United States
Harley Siezar, University of California, Riverside, United States
Kadangode Ramakrishnan, University of California, Riverside, United States
Prateek Singh, Rensselaer Polytechnic Institute, United States
Wen Cai, Rensselaer Polytechnic Institute, United States
Lance Gerday, Rensselaer Polytechnic Institute, United States
Koushik Kar, Rensselaer Polytechnic Institute, United States
Geoff Lyon, Hewlett Packard Labs, Hewlett Packard Labs
Puneet Sharma, Hewlett Packard Labs, United States

1056: Real-Time Implementation of Secure Distributed State Estimation for Networked Microgrids

Mehmet Cintuglu, ABB Inc, United States
Anil Kondabathini, ABB Inc, United States
Dmitry Ishchenko, ABB Inc, United States

1109: Development of a Wireless Sensor Node for Building Information Management Systems

Noel Bristow, Bangor University, United Kingdom
Fergus Elliott, Bangor University, United Kingdom
Joseph O'Mahony, Waterford Institute of Technology, Ireland
Giray Kartopu, Swansea University, United Kingdom
Ochai Oklobia, Swansea University, United Kingdom
Stuart Irvine, Swansea University, United Kingdom
Jeff Kettle, Bangor University, United Kingdom

1116: Occupancy-Aware Power Saving for Smart Parking IoT Sensors

Moussa Coulibaly, University Hassan II Casablanca, Morocco
Ahmed Errami, University of Hassan II Casablanca, Morocco
Essaid Sabir, University of Hassan II Casablanca, Morocco

1133: Hybrid Internet of Things Network for Energy Efficient Video Surveillance

Eyassu Dilla Diratie, University Paris-Sud, France
Khalidoun Al Agha, University Paris-Sud, France

S6.2: Low-Power Computer Vision

Session Chairs: Junsong Yuan & Yiran Chen

1242: Dynamically Reconfigurable Deep Learning for Efficient Video Processing in Smart IoT Systems

Omar Eldash, University of Louisiana at Lafayette, United States
Adam Frost, University of Louisiana at Lafayette, United States
Kasem Khalil, University of Louisiana at Lafayette, United States
Ashok Kumar, University of Louisiana at Lafayette, United States
Magdy Bayoumi, University of Louisiana at Lafayette, United States

1271: Discriminative Pose Analysis for Human Action Recognition

Jianyu Yang, Soochow University, China
Xiaofeng Zhao, Soochow University, China
Yao Huang, Soochow University, China
Chunping Liu, Soochow University, China

1281: A Survey of Methods for Low-Power Deep Learning and Computer Vision

Abhinav Goel, Purdue University, United States
Caleb Tung, Purdue University, United States
Yung-Hsiang Lu, Purdue University, United States
George Thiruvathukal, Loyola University Chicago, United States

1257: On Preamble-Based Grant-Free Transmission in Low Power Wide Area (LPWA) IoT Networks

Naveen Mysore Balasubramanya, Indian Institute of Technology Dharwad, India
Harini G S, Indian Institute of Technology Dharwad, India
Mrinal Rana, Indian Institute of Technology Dharwad, India

1022: Light-Weight RetinaNet for Object Detection on Edge Devices

Yixing Li, Arizona State University, United States
Akshay Dua, Arizona State University, United States
Fengbo Ren, Arizona State University, United States

1204: Multipath Event-Based Network for Low-Power Human Action Recognition

Xiao Wu, Peking University, China
Junsong Yuan, State University of New York at Buffalo, United States

S7: Data Acquisition, Storage, and Management for IoT

S7.1: Data Acquisition, Storage, and Management for IoT

Session Chairs: Hisham Daoud & Zag ElSayed

1042: Cost-Efficient Storage for On-Demand Video Streaming on Cloud

Mahmoud Darwich, Bloomsburg University of Pennsylvania, United States
Yasser Ismail, Southern University and A&M College, United States
Talal Darwich, Microchip Technology Inc., United States
Magdy Bayoumi, University of Louisiana at Lafayette, United States

1046: An Ensemble Trust Scoring Method for Internet of Things Sensor Networks

Stephen Adams, University of Virginia, United States
Jie Liu, University of Virginia, United States
Peter Beling, University of Virginia, United States

1071: Synapse : Towards Linked Data for Smart Cities Using a Semantic Annotation Framework

Jonggwan An, Sejong University / Korea Electronics Technology Institute, Korea
Sunil Kumar, Korea Electronics Technology Institute, Korea
Jieun Lee, Sejong University, Korea
Seungmyeong Jeong, Korea Electronics Technology Institute, Korea
Jaeseung Song, Sejong University, Korea

1123: The Logical Architecture Essential for the Creation of a Comprehensive Patient Healthcare Profile on Blockchain

Steven Delaney, Ryerson University, Canada
Doug Schmidt, Capital Blockchain, Canada
Christopher Chan, Chaoyang University, Taiwan

1148: Cloud Connectivity of a Distributed Cyber Physical Test System

Peter Schulz, Fachhochschule Dortmund, Germany
Noura Sleibi, Fachhochschule Dortmund, Germany
Philipp Tendyra, Fachhochschule Dortmund, Germany
Areej Aldaghamin, Fachhochschule Dortmund, Germany
Carsten Wolff, Fachhochschule Dortmund, Germany

S7.2: Edge and Fog computing

Session Chairs: Imed Ben Dhaou & Yasser Ismail

1102: Wallance, an Alternative to Blockchain for IoT

Loic Dalmasso, LIRMM, CNRS, Université de Montpellier, France
Florent Bruguier, LIRMM, CNRS, Université de Montpellier, France
Achraf Lamlih, LIRMM, CNRS, Université de Montpellier, France
Pascal Benoit, LIRMM, CNRS, Université de Montpellier, France

1205: Cyber-Physical Analytics: Environmental Sound Classification at the Edge

David Elliott, Florida Institute of Technology, United States
Evan Martino, Florida Institute of Technology, United States
Carlos E. Otero, Florida Institute of Technology, United States
Anthony Smith, Florida Institute of Technology, United States
Adrian M. Peter, Florida Institute of Technology, United States
Benjamin Luchterhand, Florida Institute of Technology, United States
Eric Lam, Air Force Research Laboratory, United States
Steven Leung, Air Force Research Laboratory, United States

1246: VFbed: an Architecture for Testbed-as-a-Service for Vehicular Fog-Based Systems

Ragib Hasan, University of Alabama at Birmingham, United States
Mohammad Aminul Hoque, University of Alabama at Birmingham, United States

1252: An Edge Decentralized Security Architecture for Industrial IoT Applications

Gabriel Portal, Pontifical Catholic University of Rio Grande do Sul, Brazil
Everton Matos, Pontifical Catholic University of Rio Grande do Sul, Brazil
Fabiano Hessel, Pontifical Catholic University of Rio Grande do Sul, Brazil

1303: Enhancing Smart Grids via Advanced Metering Infrastructure and Fog Computing Fusion

Syed Kakakhel, University of Turku, Finland
Aron Kondoro, Royal Institute of Technology, Sweden
Tomi Westerlund, University of Turku, Finland
Imed Ben Dhaou, University of Turku, Finland
Juha Plosila, University of Turku, Finland

1008: Scheduling of Complex Computation Offloading Tasks in Mobile Edge Cloud Network with New IP Framework

Lijun Dong, Futurewei Technologies Inc., United States
Uma Chunduri, Futurewei Technologies Inc., United States
Richard Li, Futurewei Technologies Inc., United States

1131: Adaptive Approximate Computing on Hardware Accelerators Targeting Internet-of-Things

Iraklis Anagnostopoulos, Southern Illinois University, United States
Jonathan Dickerson, Southern Illinois University, United States
Ioannis Galanis, Southern Illinois University, United States
Zois-Gerasimos Tasoulas, Southern Illinois University, United States
Lincoln Kinley, Southern Illinois University, United States

S8: Machine Learning for IoT & Big Data

S8: Machine Learning for IoT & Big Data

Session Chairs: Sanjay Patel & Kasem Khalil

1011: Resource Allocation in Mobility-Aware Federated Learning Networks: a Deep Reinforcement Learning Approach

Huy Thanh Nguyen, Nanyang Technological University, Singapore, Singapore
Nguyen Cong Luong, Nanyang Technological University, Singapore, Singapore
Jun Zhao, Nanyang Technological University, Singapore, Singapore
Chau Yuen, Singapore University of Technology and Design, Singapore
Dusit Niyato, Nanyang Technological University, Singapore, Singapore

1112: Machine Learning Methods Assessment for Denial of Service Detection in Wireless Sensor Networks

Silvio Quincozes, Universidade Federal Fluminense, Brazil
Juliano Kazienko, Universidade Federal de Santa Maria, Brazil

1079: A DDPG-Based Approach for Energy-Aware UAV Navigation in Obstacle-Constrained Environment

Hakim Ghazzai, Stevens Institute of Technology, United States
Omar Bouhamed, Stevens Institute of Technology, United States
Xiangpeng Wan, Stevens Institute of Technology, United States
Yehia Massoud, Stevens Institute of Technology, United States

1172: IoT Based Efficient Epileptic Seizure Prediction System Using Deep Learning

Hisham Daoud, University of Louisiana at Lafayette, United States
Phillip Williams, University of Louisiana at Lafayette, United States
Magdy Bayoumi, University of Louisiana at Lafayette, United States

1012: An Algorithmic Solution for Storing Big Data on the DNA Sequence

Khalid Alnafisah, Louisiana State University, United States

1212: Predictive Maintenance for Edge-Based Sensor Networks: a Deep Reinforcement Learning Approach

Kevin Ong, Nanyang Technological University, Singapore, Singapore
Dusit Niyato, Nanyang Technological University, Singapore, Singapore
Chau Yuen, Singapore University of Technology and Design, Singapore

1233: Crop Yield Prediction Using Deep Neural Network

Fatin Haque, Central Michigan University, United States

Ahmed Abdelgawad, Central Michigan University, United States

Venkata Prasanth Yanambaka, Central Michigan University, United States

Kumar Yelamarthi, Central Michigan University, United States

1248: Learner's Dilemma: IoT Devices Training Strategies in Collaborative Deep Learning

Deepti Gupta, University of Texas at San Antonio, United States

Olumide Kayode, University of Texas at San Antonio, United States

Smriti Bhatt, Texas A & M University-San Antonio, San Antonio, United States

Maanak Gupta, Tennessee Technological University, Cookeville, United States

Ali Saman Tosun, University of Texas at San Antonio, United States

S9: Design, Integration and Testing Methods

S9: Design, Integration and Testing Methods

Session Chairs: Kumar Yelamarthi & Haytham Idriss

1070: WalkID: Towards Context Awareness of Smart Home by Identifying Walking Sounds

Long Huang, Louisiana State University, United States

Chen Wang, Louisiana State University, United States

1098: Iota vs. Ripple: a Comparison Inside an Economy of Things Architecture for Industry 4.0

Bruno Machado Agostinho, Federal University of Santa Catarina, Brazil

Mateus Manoel Pereira, Federal University of Santa Catarina, Brazil

Alexandre Pereira Back, Federal University of Santa Catarina, Brazil

Alex Sandro Roschildt Pinto, Federal University of Santa Catarina, Brazil

Mario Antônio Ribeiro Dantas, Federal University of Juiz de Fora, Brazil

1099: IOTapass: Enabling Public Transport Payments with IOTA

Paulo C. Bartolomeu, Universidade de Aveiro, Portugal

Emanuel Vieira, Universidade de Aveiro, Portugal

Seyed H. Hosseini, Universidade de Aveiro, Portugal

Joaquim Ferreira, Universidade de Aveiro, Portugal

1145: No-Code Shadow Things Deployment for the IoT

Ege Korkan, Technical University of Munich, Germany

Emanuel Regnath, Technical University of Munich, Germany

Sebastian Kaebisch, Siemens AG, Germany

Sebastian Steinhorst, Technical University of Munich, Germany

1161: Distributed, Secure, Self-Sovereign Identity for IoT Devices

Samson Kahsay Gebresilassie, Ulster University, United Kingdom

Joseph Rafferty, Ulster University, United Kingdom

Philip Morrow, Ulster University, United Kingdom

Liming Luke Chen, Ulster University, United Kingdom

Mamun Abu-Tair, Ulster University, United Kingdom

Zhan Cui, British Telecom, United Kingdom

1171: Evaluating a SysML-Based Graphical Notation for Modeling Internet of Things System Architectures

Eduardo Silva, Federal University of Rio Grande do Norte, Brazil

Lidiane Santos, Federal University of Rio Grande do Norte, Brazil

Thais Batista, Federal University of Rio Grande do Norte, Brazil

Jair Leite, Federal University of Rio Grande do Norte, Brazil

Everton Cavalcante, Federal University of Rio Grande do Norte, Brazil

Flavio Oquendo, IRISA-UMR CNRS/Université Bretagne Sud, France

1196: Security Issues in the Design of Chips for IoT

Ricardo Reis, Universidade Federal do Rio Grande do Sul, Brazil

Calebe Conceição, Instituto Federal Sul-rio-grandense - IFSUL, Brazil

VT1: Vertical and Topical Tracks

VT1: Vertical and Topical Tracks

Session Chairs: Adam Drobot & Ahmed Abdelgawad

1307: Predicting Injectable Medication Adherence via a Smart Sharps Bin and Machine Learning

Yingqi Gu, Dublin City University, Ireland
Akshay Zalkikar, HealthBeacon Ltd, Ireland
Lara Kelly, HealthBeacon Ltd, Ireland
Kieran Daly, HealthBeacon Ltd, Ireland
Tomas E. Ward, Dublin City University, Ireland

1280: Reinforcement Learning on Computational Resource Allocation of Cloud-Based Wireless Networks

Beiran Chen, Trinity College Dublin, Ireland
Yi Zhang, Trinity College Dublin, Ireland
George Iosifidis, Trinity College Dublin, Ireland
Mingming Liu, Dublin City University, Ireland

1282: Kubernetes in Fog Computing: Feasibility Demonstration, Limitations and Improvement Scope

Paridhika Kayal, University of Toronto, Canada

1262: Multi-Task Gaussian Process Learning for Energy Forecasting in IoT-Enabled Electric Vehicle Charging Infrastructure

Masood Parvania, University of Utah, United States
Mostafa Gilanifar, University of Utah, United States
Mohamad El Hariri, University of Utah, United States

1167: A Secure Cloud Migration, Monitoring and Analytics Framework for Industrial Internet of Things

Rafiullah Khan, Queen's University Belfast, United Kingdom
Kieran McLaughlin, Queen's University Belfast, United Kingdom
Boojoong Kang, Queen's University Belfast, United Kingdom
David Laverty, Queen's University Belfast, United Kingdom
Sakir Sezer, Queen's University Belfast, United Kingdom

1245: Sensing Teamwork During Multi-Objective Optimization

Ira Winder, Massachusetts Institute of Technology, United States
Dylan Delaporte, University of Tokyo, Japan
Shinnosuke Wanaka, National Maritime Research Institute, Japan
Kazuo Hiekata, University of Tokyo, Japan

1292: A Crowdsensing Solution for Tracking Bicycle Path Conditions

Ilse Bohé, Katholieke Universiteit Leuven, Belgium

Jeroen Gardeyn, Katholieke Universiteit Leuven, Belgium

Ludo Cuypers, COMmeto, Belgium

Jorn Lapon, Katholieke Universiteit Leuven, Belgium

Michiel Willocx, Katholieke Universiteit Leuven, Belgium

Vincent Naessens, Katholieke Universiteit Leuven, Belgium

MS1: M.Sc. Forum

MS1: M.Sc. Forum

Session Chairs: Ahmed Abdelgawad & Soumya Datta

1078: Crop Yield Analysis Using Machine Learning Algorithms

Fatin Haque, Central Michigan University, United States

Ahmed Abdelgawad, Central Michigan University, United States

Venkata Prasanth Yanambaka, Central Michigan University, United States

Kumar Yelamarthi, Central Michigan University, United States

1082: Proof-of-Authentication Consensus Algorithm: Blockchain-Based IoT Implementation

Sudip Maitra, Central Michigan University, United States

Venkata Prasanth Yanambaka, Central Michigan University, United States

Ahmed Abdelgawad, Central Michigan University, United Kingdom

Deepak Puthal, Newcastle University, United Kingdom

Kumar Yelamarthi, Central Michigan University, United States

1083: An Energy-Efficient and Reliable RPL for IoT

Khandaker Foysal Haque, Central Michigan University, United States

Ahmed Abdelgawad, Central Michigan University, United States

Venkata Prasanth Yanambaka, Central Michigan University, United States

Kumar Yelamarthi, Central Michigan University, United States

1142: Intrusion Detection System in Smart Home Network Using Artificial Immune System and Extreme Learning Machine Hybrid Approach

Emmanuel Dare Alalade, University of Cincinnati, United States

1177: Physical Unclonable Function Based Hardware Security for Resource Constraint IoT Devices

Muhammed Kawser Ahmed, Central Michigan University, United States

Venkata Prasanth Yanambaka, Central Michigan University, United States

Ahmed Abdelgawad, Central Michigan University, United States

Kumar Yelamarthi, Central Michigan University, United States

1231: Wearable Health Monitoring System Using Flexible Materials Electrodes

Tuan Nguyen Gia, University of Turku, Finland

Shenjie Bao, University of Turku, Finland

Wei Chen, Fudan University, China

Tomi Westerlund, University of Turku, Finland

PhD1: PhD Forum

PhD1: PhD Forum

Session Chairs: Soumya Datta & Ahmed Abdelgawad

1149: IoT Security Using Deception – Measuring Improved Risk Posture

David Weissman, Colorado State University, United States

1153: IoT Devices Reliability Study: Multi-RAT Communication

Kalpit Dilip Ballal, Technical University of Denmark, Denmark

Lars Dittmann, Technical University of Denmark, Denmark

Sarah Ruepp, Technical University of Denmark, Denmark

Martin Nordal Petersen, Technical University of Denmark, Denmark

1154: Design and Implementation of a Cloud-Based Multi-LPWAN IoT Data Collection Service

Eder Ollora Zaballa, Technical University of Denmark, Denmark

Cécile Vanhelleputte, EPF École d'ingénieur, France

Sarah Ruepp, Technical University of Denmark, Denmark

Martin Nordal Petersen, Technical University of Denmark, Denmark

Michael Stübert Berger, Technical University of Denmark, Denmark

1174: PhD Forum: Enabling Autonomic IoT for Smart Urban Services

Muhammad Junaid Farooq, New York University, United States

Quanyan Zhu, New York University, United States

1304: Application of Machine Learning Techniques for the Calibration of Low Cost IoT Sensors in Environmental Monitoring Networks

Amaka Okafor, University College Dublin, Ireland

Declan Delaney, University College Dublin, Ireland

D1: Demo

D1: Demo

Session Chairs: Prasanth Yanambak & Ahmed Abdelgawad

1163: The Manufacturing Data and Machine Learning Platform: Enabling Real-Time Monitoring and Control of Scientific Experiments via IoT

Ryan Chard, Argonne National Laboratory, United States
Jakob Elias, Argonne National Laboratory, United States
Joseph Libera, Argonne National Laboratory, United States
Ian Foster, Argonne National Laboratory, United States
Santanu Chaudhuri, Argonne National Laboratory, United States

1201: Connected Vehicles: Towards Accident-Free Intersections

Khalid Elgazzar, University of Ontario Institute of Technology, Canada
Ghadeer Abdelkader, University of Ontario Institute of Technology, Canada

1213: Decentralized IoT Data Authorization with Pebble Tracker

Xinxin Fan, IoTEx, United States
Qi Chai, IoTEx, United States
Zhefeng Li, IoTEx, United States
Tian Pan, IoTEx, United States

1214: Voice Controlled Servo Motor Using an Android Application

Aline Maalouf, Australian National University, Australia
Advait Sivakumar, University of Tasmania, Australia
Kshitij Ajay Jain, Baraja Pvt. Ltd, Australia

1221: Multi-Layer Flexible Chipless RFID Tag Based on Group Delay Encoding

Raquel Aline Araújo Rodrigues Felix, Federal University of Campina Grande, Brazil
Wilson Costa Felix, Federal University of Pernambuco, Brazil
Edmar Candeia Gurjão, Federal University of Campina Grande, Brazil

1222: Soil Moisture Sensor with a Microstrip Band Stop Filter

Raquel Aline Araújo Rodrigues Felix, Federal University of Campina Grande, Brazil
Wilson Costa Felix, Federal Institute of Rio Grande do Norte, Brazil
Alexandre Henrique Soares de Oliveira, Federal University of Campina Grande, Brazil
Raymundo de Amorim Junior, Federal University of Campina Grande, Brazil
Débora Borges Nobre, Federal University of Campina Grande, Brazil
Leandro de Oliveira Souto, Federal University of Campina Grande, Brazil
Victor Emanuel de Silva, Federal University of Campina Grande, Brazil

1223: Proving IoT Devices Firmware Integrity with Bijective MAC Time Stamped

Pascal Urien, Telecom ParisTech, France

1240: DOCOR: Sensing Everything from Route Buses

Ismail Arai, Nara Institute of Science and Technology, Japan

Masahiro Kametani, Minato Kanko Bus Inc., Japan

Norihiko Honda, Minato Kanko Bus Inc., Japan

Toyokazu Akiyama, Kyoto Sangyo University, Japan

Closing

Closing

Conference Co-Chair: Magdy Bayoumi & Adam Drobot