

LIST OF TOPICS for the SEMINAR

Internet of Things, 2019-2020

RESEARCH PAPERS

- ✓ **(802.15.4) Beacon Synchronization and Duty-Cycling in IEEE 802.15.4 Cluster-Tree Networks: A Review**
<https://ieeexplore.ieee.org/document/8340042/>
- ✓ **(BLE) Multi-hop Real-time Communications over Bluetooth Low Energy Industrial Wireless Mesh Networks**
<https://ieeexplore.ieee.org/document/8355905/>
- ✓ **(LORA) On the Coverage of LPWANs: Range Evaluation and Channel Attenuation Model for LoRA Technology**
<https://ieeexplore.ieee.org/document/7377400/>
- ✓ **(LORA) Powering the IoT through embedded machine learning and LoRa**
<https://ieeexplore.ieee.org/document/8355177>
- ✓ **(LORAWAN) Improving Reliability and Scalability of LoRaWANs Through Lightweight Scheduling Brecht Reynders**
<https://ieeexplore.ieee.org/document/8315103/>
- ✓ **(LORAWAN) LoRaWAN: Evaluation of Link-and System-Level Performance**
<https://ieeexplore.ieee.org/document/8344411/>
- ✓ **(6LOWPAN/RPL) Performance Analysis of Routing Protocol for Low Power and Lossy Networks (RPL) in Large Scale Networks**
<https://ieeexplore.ieee.org/document/8048510/>
- ✓ **(6LOWPAN/RPL) RPL routing protocol in advanced metering infrastructures: An analysis of the unreliability problems**
<https://ieeexplore.ieee.org/document/6388038/>
- ✓ **(MQTT) MQTT-G: A Publish/Subscribe Protocol with Geolocation**
<https://ieeexplore.ieee.org/document/8441479>
- ✓ **(MQTT) A comparative evaluation of AMQP and MQTT protocols over unstable and mobile networks**
<https://ieeexplore.ieee.org/document/7158101/>
- ✓ **(COAP) BDP-CoAP: Leveraging Bandwidth-Delay Product for Congestion Control in CoAP**
<https://ieeexplore.ieee.org/document/8767177>

- ✓ **(COAP) CoAP congestion control for the Internet of Things**
<https://ieeexplore.ieee.org/document/7509394/>
- ✓ **(COAP) CoAP Proxy Virtualization for the Web of Things**
<https://ieeexplore.ieee.org/document/7037719/>
- ✓ **(TCP) TCP in the Internet of Things: From Ostracism to Prominence**
<https://ieeexplore.ieee.org/document/8259430/>
- ✓ **(WEB of Things) From Raw Data to Smart Manufacturing: AI and Semantic Web of Things for Industry 4.0**
<https://ieeexplore.ieee.org/document/8497012>
- ✓ **(WEB of Things) WoT-AD: A Descriptive Language for Group of Things in Massive IoT**
<https://ieeexplore.ieee.org/document/8767228>
- ✓ **(WEB of Things) A Car as a Semantic Web Thing: Motivation and Demonstration**
<https://ieeexplore.ieee.org/document/8534533>
- ✓ **(IoT DATA MANAGEMENT) MongoDB-Based Repository Design for IoT-Generated RFID/Sensor Big Data**
<https://ieeexplore.ieee.org/document/7279070/>
- ✓ **(IoT DATA ANALYTICS) Deep Belief Network for Meteorological Time Series Prediction in the Internet of Things**
<https://ieeexplore.ieee.org/document/8513849>
- ✓ **(PRIVACY) Privacy-Preserving Content-Oriented Wireless Communication in Internet-of Things**
<https://ieeexplore.ieee.org/document/8350294/>

- ✓ **(PRIVACY) Security and Privacy Analyses of Internet of Things Children's Toys**
<https://ieeexplore.ieee.org/document/8443103/>
- ✓ **(CROWDSOURCING) Coastal Monitoring System Based on Social Internet of Things Platform**
<https://ieeexplore.ieee.org/document/8906096>
- ✓ **(WIDE AREA MONITORING) Design of a wireless sensor network based IoT platform for wide area and heterogeneous applications**
<https://ieeexplore.ieee.org/document/8353851/>
- ✓ **(SMART AGRICULTURE) A Low Power IoT Network for Smart Agriculture**
<https://ieeexplore.ieee.org/document/8355152/>
- ✓ **(FOG/EDGE COMPUTING) Adaptive Transmission Optimization in SDN-Based Industrial Internet of Things With Edge Computing**
<https://ieeexplore.ieee.org/document/8267270>
- ✓ **(FOG/EDGE COMPUTING) Comparison of edge computing implementations: Fog computing, cloudlet and mobile edge computing**
<https://ieeexplore.ieee.org/document/8016213>
- ✓ **(FOG/EDGE COMPUTING) Multitier Fog Computing With Large-Scale IoT Data Analytics for Smart Cities**
<https://ieeexplore.ieee.org/document/7972945/>
- ✓ **(FOG/EDGE COMPUTING) Application Aware Workload Allocation for Edge Computing based IoT**
<https://ieeexplore.ieee.org/document/8336866/>
- ✓ **(MACHINE LEARNING) Powering the IoT through embedded machine learning and LoRa**
<https://ieeexplore.ieee.org/document/8355177/>
- ✓ **(MACHINE LEARNING) Learning IoT in Edge: Deep Learning for the Internet of Things with Edge Computing**
<https://ieeexplore.ieee.org/document/8270639/>
- ✓ **(MACHINE LEARNING) A New Deep-Q-Learning-Based Transmission Scheduling Mechanism for the Cognitive Internet of Things**
<https://ieeexplore.ieee.org/document/8057766/>
- ✓ **(GENERAL) Making Internet of Things Real**
<https://ieeexplore.ieee.org/document/8835419>
- ✓ **(GENERAL) Natural Language for an Interoperable Internet of Simple Things**
<https://ieeexplore.ieee.org/document/8767215>
- ✓ **(GENERAL) EmIoT: Giving Emotional Intelligence to the Internet of Things**
<https://ieeexplore.ieee.org/document/8463412>

TECHNOLOGIES, TOOLS and STANDARDS

The links below must be considered entry points from where to start the search for additional documents/resources. Moreover, students might consider to integrate the slides with a live demo of the tool/technology being presented.

- ✓ **Ingenu, Machine Network**
<https://www.ingenu.com/technology/machine-network/>
- ✓ **IOTivity**
<https://openconnectivity.org/developer/reference-implementation/iotivity>
- ✓ **Cylon.js**
<https://cylonjs.com>
- ✓ **Node-RED**
<https://nodered.org>
- ✓ **Open Time Series Database (Open TSDB)**
<http://opentsdb.net>
- ✓ **Contiki**
<http://www.contiki-os.org/>
- ✓ **Amazon FreeRTOS**
<https://aws.amazon.com/it/freertos/>
- ✓ **Apache Kafka**
<https://kafka.apache.org/>
- ✓ **Apache Beam**
<https://beam.apache.org>
- ✓ **MainFlux**
<https://www.mainflux.com>
- ✓ **MicroPython**
<https://micropython.org>
- ✓ **EclipseKura**
<https://www.eclipse.org/kura/index.php>
- ✓ **Iota**
<https://www.iota.org>
- ✓ **Balena**
<https://www.balena.io>