Nordic IoT News

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First view of jointly available IIoT equipment

The Hub partners have collected a list of IIoT equipment that can be exploited by the Hub students (http://www.nordic-iot.org/doctoral-school/rd-facilities/). It ranges from simple standalone set-ups to fully equipped labs or prototyping facilities. Apart from a brief description of the equipment the students can access user manuals and contact persons for support. Currently the list includes as various IIot equipment as:

- Sigfox Access Station Micro
- Sigfox SDR Dongle
- IoT prototyping lab
- Pycom FiPy board
- SimpleLink™ CC2650 wireless MCU LaunchPad™ Development Kit
- Industry 4.0 Lab
- Robotic Welding Lab
- Industrial Robotic Lab consisting of four robot cells
- 5G lab
- Kone overhead industrial crane
- Developer board giving access to NB-IoT (bands 8 and 20)

Please contact your PhD supervisor if you want to exploit these possibilities. Being an affiliated Hub student means that the associated costs (travel, subsistence, etc.) are eligible for funding.

Hub Workshop on Fog Computing and the IoT

Following the successful Workshop on Fog Computing and the Internet of Things organized last year in Montreal the Hub has been asked to organize a second workshop on 21 April 2020 during the CPS-IoT Week in Sydney, Australia. The organization of the event is chaired by Anton Cervin, Lund University. More info at https://sites.google.com/iotcenter.dk/fog-iot

Hub Review Magazine 2018-19

The Nordic Hub has just released The Nordic IoT Review magazine, showing the progress made during the last two years (2018-2019). Featured in the magazine are news stories relating to recent advances in science and technology originating from the HI2OT. Generally, the Hub has two focuses, namely a doctoral school on Industrial IoT and a related research cooperation between the five Nordic universities involved in the Hub. There are currently 45 PhD students associated with the Hub, taking advantage of jointly organised summer schools, specific IoT lectures and a mobility programme encouraging students to take advantage of visiting one another. The research cooperation takes place by joint representation in EU brokerage events, facilitating knowledge exchange and provision of access to IoT infrastructures as well as driving technology road mapping related to Industrial IoT.

AALTO Center for Autonomous Systems - ACAS

The newly established ACAS center combines Aalto University's expertise on automation and control systems, communications engineering, edge and cloud computing, machine intelligence, mechatronics, sensing, and human-systems interaction to tackle challenging systems-related research problems related to autonomous operation of networked machines. ACAS has three main focus areas: 1) Perception and Sensing, 2) Autonomy and 3) Communication and Computation.

Aalto University, FI
Lund University, SE
Norwegian University of Science and Technology, NO
Royal Institute of Technology, SE
Technical University of Denmark, DK

Yearly Hub meeting in Gothenburg

Currently the Hub is planning the third Yearly meeting to take place on 29-30 April in Gothenburg. The location has been chosen in order to seek closer integration with the IIoT activities at Chalmers University of Technology. For the same reason we will pursue invited presentations from the local departments working with industrial IoT. The programme will also include sessions on IIoT roadmapping as introduced during our meeting last November in Stockholm.

Following the successful Yearly meeting in Espoo we will also this time encourage our students working in "Networking" and "Data Analytics & Machine Learning" to present a poster about their work. These poster sessions will focus on identifying synergies and ways of collaboration. The said projects include:

Networking:

- Next generation SDN/NFV-based Management of Service
- 5G-based steering of Unmanned Aerial Vehicles
- Mobile Network enabled UAVs for the delivery of IoT services
- Communication in Real-Time Multicore Systems
- Energy conservation in 5G networks using DRX
- Latency Critical Networking
- Future Scenarios and Value Network Configurations for Industrial 5G
- Design, optimisation and control of self-driving networked systems
- Optimisation and control of networked systems for autonomous vehicle applications
- Ultra-reliable and low-latency networked systems aimed for time-critical services in an Industry 4.0 environment
- Ultra-reliable IoT network for mission-critical applications
- 5G network slicing strategies for a smart factory
- Towards Mitigating the Impact of UAVs on Cellular communications

Data Analytics & Machine Learning:

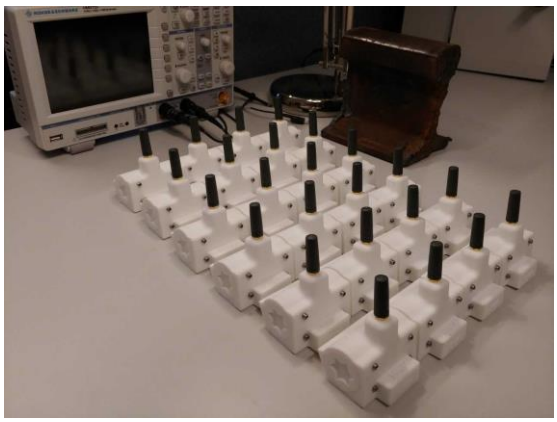
- Distributed real-time operational data analytics
- Data Analytics for Cyber-physical Systems: Current Situation and Strategies for Action
- Machine Learning for Autonomous Data Centres
- Distributed machine learning at the edge
- Efficient user generated information management
- Optimisation of future mobile communication systems using Deep Learning
- Neoro-adaptive Digital Learning
- Virtual reality for IoT

The technical programme will be ready in March.

NTNU developed monitoring system to be deployed in Oslo

NTNU MTP has in cooperation with BANE NOR scheduled deployment of the new wireless sensor system developed in-house at NTNU for remote monitoring of railway points and level crossings. The first installation will be rolled out in February and other locations will follow shortly thereafter. Sensors will be monitoring several different locations around the Oslo area including the tunnel underneath the city which is an important "single-point-of-failure" for all railroad traffic in Norway, since this is the only connection between east and west.

This one-year long pilot will allow us to collect a large amount of train-track interaction data that will be used for development of algorithms for estimation of the track deterioration as well as for detection of train suspension faults.



Wireless Vibration sensors ready for deployment

Continuous monitoring systems such as this one can contribute to make maintenance decisions more accurate and faster. We see deploying such systems in an early stage as important both for the research community as well as the industrial partner. Simulations for various strategies can then be validated on real data which can allow for example for a smoother transition from periodic to the more desirable predictive, condition-based maintenance in a not-so distant future. A public dataset from these measurements will be made available to the Hub students towards the end of 2020.