

# DELTA Autumn Workshop 2021

23.-24.11.2021 VIRTUAL EVENT

## Agenda

Tuesday 23.11.

**9:00 Opening** (Jari Nurmi)

**9:20 Keynote 1: Jari Nurmi, TAU: Approximate Computing – The Holy Grail of Low-Energy Electronic Systems?**

**10:00 Session: Wearable and Implantable Technologies** (Chair: Lucie Klus, TAU)

10:00 Constantino Ivarcasado, UO: Meditation detection using wearable devices

10:20 Janne Heilala, UTU: A Neural Control Interface (NCI) Basics

10:40 Waleed bin Qaim, TAU: Understanding the Performance of Task Offloading for Wearables in a Two-Tier Edge Architecture

*11:00 Break*

**11:20 Session: Communications and Positioning** (Chair: Bo Tan, TAU)

11:20 Xinying Chen, JYU: Finite-Blocklength Multi-Antenna Covert Communication Aided by a UAV Relay

11:40 Pasi Koivumäki, Aalto: Wave Scatterer Localization in Outdoor-To-Indoor Channels at 4 and 14 GHz

12:00 Celikbilek Kaan, TAU: Constellation Optimization

12:20 Ajinkya Gorad, Aalto: Bearing estimation using foghorn sounds

*12:40 Lunch Break*

**14:00 Keynote 2: Ville Könönen, Stora Enso: AI service development and orchestration at Stora Enso** (Chair: Tapio Frantti, JYU)

**14:40 Session: Digital Twins** (Chair: t.b.d.)

14:40 Sajad Shahsavari, UTU: MCX --- An Open-Source Framework for Digital Twins

15:00 Xinyi Tu, Aalto: Integrating the Digital Twin Document into an Industrial Mixed Reality Application

*15:20 End of day*

Wednesday 24.11.

**09:00 Keynote 3: Jani Kirmanen, Silverskin: Penetration Testing** (Chair Tapio Frantti, JYU)

**09:40 Session: Applications of Machine Learning** (Chair: Simona Lohan, TAU)

09:40 Pouya Jafarzadeh, UTU: IoT-Based Household Energy Consumption Prediction Using Machine Learning

10:00 Rabia Qadar, TAU: Q-learning-based Routing in multimodal Underwater networks

10:20 Akpo Siemuri, UWASA: Improving Precision GNSS Positioning and Navigation Accuracy on Smartphones using Machine Learning

*10:40 Lunch Break*

**14:40 Session: Miscellaneous Topics** (Chair: Jouni Isoaho, UTU)

14:40 Karem Lozano Montero, TAU: Fully Printed Unobtrusive and Skin-conformable Piezoelectric Energy Harvester

15:00 Sayawu Yakubu Diaba, UWASA: On the Performance Metrics for Cyber-Physical Attack Detection in Smart Grid

*15:20 Short break*

**15:30 Keynote 4: Kari Tammi, Aalto University: Aalto Self-Driving Car** (Chair Riku Jäntti, Aalto)

*16:00 End of workshop*