

# DELTA 10-year Anniversary Workshop 2024

October 22-23, 2024

Scandic Tampere City, Hämeenkatu 1, Tampere

## Agenda

### October 22

08:00-09:30 Breakfast/welcome coffee

09:30 Opening and introduction

**10:00 Keynote 1: Esa Räsänen, TAU** (Chair: Jari Nurmi, TAU)

#### **Monitoring of Cardiac Health Made Simple**

**10:40 Human-centered Technology** (Chair: Jari Nurmi, TAU)

10:40 Fabliha Islam, TAU: Wi-Fi sensing based Gesture Recognition using Neural Network Quantization via Knowledge Distillation

11:00 Tippayaporn Pavavimol, TAU: Transitions between Realities: Exploring the Usage of XR Systems for Bridging Reality and Virtuality

11:20 Lotta Ylinen, TAU: The Possibilities and Challenges of Passively Sensing Young People's Loneliness

11:40 Hsiao-Chun Lin, TAU: The Multimodal AI-enabled Approach for Stress Monitoring

12:00 Lunch

**13:30 Keynote 2: Kalle Palomäki, Modulight** (Chair: Heidi Kuusniemi, UWASA)

#### **Light in Service of Healthcare**

**14:15 Global Navigation Satellite Systems** (Chair: Heidi Kuusniemi, UWASA)

14:15 Yelyzaveta Pervysheva, TAU: Multi-Receiver Ensemble Machine-Learning Techniques for GNSS Spoofing Detection with Generalisability Approach

14:35 Majed Imad, TAU: Comparison between basic and ML models to predict the ionospheric errors

14:55 Antoine Grenier, TAU: Approximate Computing in GNSS receivers

15:15 Coffee break

**15:45 AI-based Applications** (Chair: Jouni Isoaho, UTU)

15:45 Mojtaba Mohammadikarachi, UWASA: Application of Artificial intelligence in demand side management

16:05 Rabia Qadar, TAU: Energy-Efficient Routing for Reliable and Adaptive Multi-Modal Communication in Underwater Acoustic Networks

16:25 Xiaotian Bi, UWASA: Artificial Intelligence applied on Fuel Injection System

16:45 Short break

**17:00 Panel discussion: The future of doctoral education in electronics, communications and automation in Finland** (Moderator: Jari Nurmi, TAU)

Jouni Isoaho, UTU; Heidi Kuusniemi, UWASA; Esa Räsänen, TAU ENS; Jyrki Vuorinen, TAU ITC

18:00 End of panel discussion; toasting to DELTA.

18:30 Dinner in the Scandic's restaurant

October 23

08:00-09:00 Breakfast

**09:00 Keynote 3: Mikko Honkala, Nokia** (Chair: Jari Nurmi, TAU)

**Machine Learning in Wireless Communications**

**09:45 Antennas** (Chair: Jouni Isoaho, UTU)

09:45 Albert Salmi, AALTO: Reactively Loaded Sparse Antenna Array

10:05 Niko Lindvall, TAU: 2-18 GHz wideband tightly coupled, dual polarized Vivaldi antenna

10:25 Uzman Ali, TAU: Quad-Band Meandered Implantable Planar Inverted-F Antenna for Wireless Brain Health Monitoring

10:45 Coffee break

**11:10 Miscellaneous Technologies** (Chair: Aleksandr Ometov, TAU)

11:10 Yekaterina Sadovaya, TAU: Distributed Delay-Aware Link Scheduling and Route Selection in mmWave IAB Networks

11:30 Risto Jurva, UOULU; Stakeholders and business models of future local 6G operators

11:50 Ninja Kajas, TAU: Fabricating ultrathin piezoelectric sensors for e-skin

12:10 Masud An-Nur Islam Fahim, UWASA: ST2ST: Self-Supervised Test-time Adaptation for Video Action Recognition

12:30 Lunch

**14:00 OTFS Application and Implementation** (Chair: Jari Nurmi, TAU)

14:00 Guillem Foreman Campins, TAU: OTFS Achievable Ranging Performance in LEO Urban Areas

14:20 Zohaib Hassan, TAU: Evaluation of Coarse-Grained Reconfigurable Array for a Dual Mode OTFS-OFDM Modulator

**14:40 Keynote 4: Reza Ghabzeloo, TAU** (Chair: Aleksandr Ometov, TAU)

**Awareness and Intelligence for Mobile Machinery**

15:25 Coffee break

**15:45 Keynote 5: Ville Kaseva, Wirepas** (Chair: Jari Nurmi, TAU)

**DECT-2020 NR - the ultimate IoT standard?**

16:30 End of workshop