

DELTA Summer Workshop 2022

Aalto University, Otaniemi, Espoo, August 24-25, 2022

Address: Otakaari 1, room U1

Agenda

Wednesday August 24

- 10:30 **Opening** (Jari Nurmi, TAU; Riku Jäntti, Aalto)
- 10:45 Keynote 1:
Simo Särkkä, Aalto: Indoor positioning and automatic mapping of the environment
- 11:30 Coffee
- 12:00 **Satellite-based Positioning** (Chair: Simo Särkkä, Aalto)
- 12:00 Yongchao Dang, Aalto: Deep learning based GPS spoofing detection for cellular-connected UAVs
- 12:20 Kannan Selvan, UWASA: A review on orbit determination of LEO satellites based on various GNSS observations
- 12:40 Saiful Islam, FGI/TAU: Combating Single-Frequency Jamming through a Multi-Frequency, Multi-Constellation Software Receiver: A Case Study for Maritime Navigation in the Gulf of Finland
- 13:00 Lunch
- 14:00 **Positioning and Sensing** (Chair: Simo Särkkä, Aalto)
- 14:00 Ajinkya Gorad, Aalto: Vessel bearing estimation using visible and thermal imaging
- 14:20 Mahmoud Elsanhoury, UWASA: Precision Positioning for Smart Logistics Using Ultra-Wideband Technology-Based Indoor Navigation: A Review
- 14:40 Akpojoto Siemuri, UWASA: Machine learning based adaptive positioning (MAP) post-processing kinematic (PPK) algorithm (MAP-PPK) for High Precision Positioning on Smartphones
- 15:00 Antoine Grenier, TAU: Approximation techniques for low-power GNSS receiver
- 15:20 Coffee
- 15:45 Keynote 2:
Jari Nurmi, TAU: Challenges and Opportunities in Coarse-Grained Reconfigurable Computing
- 16:30 **Edge Computing** (Chair: Jari Nurmi, TAU)
- 16:30 Hans Jakob Damsgaard, TAU: Reconfigurable Approximating Accelerators for Secure Edge Computing
- 16:50 Waleed Bin Qaim, TAU: Task Offloading for Wearables in a Two-Tier Edge Architecture
- 17:10 end of day1 program
- 19:00 Dinner/social event (t.b.d.)

Thursday August 25

- 9:00 Keynote 3:
Janne Peisa, Ericsson: Radio in the cloud
- 9:45 **Wireless Communication Systems** (Chair: Riku Jäntti, Aalto)
- 9:45 Mikko Laakso, Aalto: Mitigating the LED nonlinearity in VLC
- 10:05 Anna Gaydamaka, TAU: GAR: Gradient assisted routing for topology self-organization in dynamic mesh networks
- 10:25 Xinyi Tu, Aalto: TwinXR: Method for using Digital Twin Descriptions in eXtended Reality Applications
- 10:45 Rabia Qadar, TAU: Underwater Optical Communication Module: An Extension to the ns-3 Network Simulator
- 11:05 Coffee
- 11:20 **Humans and Machines** (Chair: N.N.)
- 11:20 Eurus Jiayi Zhang, JYU: Machine that understands people
- 11:40 Yue Jiang, Aalto: Optimization for Adaptive User Interfaces
- 12:00 Aditi Site, TAU: A Machine-Learning-Based Analysis of the Relationships between Loneliness Metrics and Mobility Patterns for Elderly
- 12:20 Lunch
- 13:20 **RIS and Backscattering** (Chair: Riku Jäntti, Aalto)
- 13:20 Rafaela Schroeder, UO: Channel Estimation for Hybrid RIS Aided MIMO Communications via Atomic Norm Minimization
- 13:40 Edson Egashira, UO: Secrecy Capacity Maximization for a Hybrid Relay-RIS Scheme in mmWave MIMO Networks
- 14:00 Jingyi Liao, Aalto: Ambient backscatter communications using LTE cell specific reference signals
- 14:20 Ritayan Biswas, TAU: Evaluation of Maximum Range for Backscattering Communications Utilising Ambient FM radio signals
- 14:40 Coffee
- 15:00 **Miscellaneous Technologies** (Chair: Jari Nurmi, TAU)
- 15:00 Kari Hepola, TAU: RISC-V Customization in OpenASIP
- 15:20 Ivy Saha Roy, UO: Printing technology for sustainable energy storage systems
- 15:40 end of workshop