



W3: Machine Learning for Wireless Communications

Sunday 22 September 2019 • 09:00 – 12:30 • Kealohilani Tower Kaimuki 2 (2nd floor)

09:00 Keynote I: Future Indoor Networks with a 6th Sense
Klaus Doppler, Nokia Bell Labs, USA

Imagine a future where with ubiquitous wireless Gigabit connectivity to augment your reality or to consume virtual reality content. Cloud connected robots will collaboratively build a model of the physical world and jointly perform complex tasks. This future is coming. It will start indoors and in campus areas, followed by our digital homes, and will be enabled by future indoor networks with a 6th Sense. This network will be the core infrastructure of smart buildings, providing sensory information and insights to meet i) the physiological needs---such as lighting, heating, health and safety---as well as ii) the work-related requirements---such as immersive virtual workplaces, navigation and asset tracking---of building occupants to improve the efficiency of enterprises.

Keynote II: Wireless Networks Design in the Era of Deep Learning: Model-Based, AI-Based, or Both?
Marco di Renzo, Centrale Supélec, France

10:30 Refreshments break

11:00 Session I

An Adaptive Machine Learning Based Approach for the Cancellation of Second-Order-Intermodulation Distortions in 4G/5G Transceivers

Oliver Ploder, Oliver Lang, Thomas Paireder, Mario Huemer, Johannes Kepler University Linz

Deep Neural Network based Cell Sleeping Control and Beamforming Optimization in Cloud-RAN

Gehui Du, Luhan Wang, Qing Liao, Haoxiang Hu, Beijing University of Posts and Telecommunications

Democratized Radio Tomography: Using Consumer Equipment to See Through Walls

Lucy Bowen, Robert Hulbert, Jason Fong, Zachary Rentz, Bruce DeBruhl, California Polytechnic State University

Learning the Wireless V2I Channels Using Deep Neural Networks

Tian-Hao Li, Muhammad RA Khandaker, Heriot-Watt University; Faisal Tariq, University of Glasgow; Kai-Kit Wong, University College London; Risala Tasin Khan, Jahangirnagar University