nanoSeminar Series 2022

Institute for Materials Science

Dr. Cecilia Carbonelli

Department of Physics, University of Ottawa, Canada

Infineon

Thursday, June 23nd 2022
13:00 – 14:00

Normal: Seminar Room 115, Hallwachsstr. 3 (HAL)
Pandemic version: https://tinyurl.com/nanoSeminar-GA

The availability of a large amount of environmental sensor data and the growing interest towards a joint optimization of algorithms, software and dedicated hardware is motivating the use of machine learning (ML) algorithms and neural networks also on small devices with the goal of making the sensors ‘smarter’ and thus enabling ‘intelligence at the edge’. Environmental sensing applications that are integrating AI-enabled sensors as algorithms become more readily available, practical and better understood.

In this talk we review the recent achievements in the area of outdoor air quality monitoring with chemical gas sensors focusing on our training and calibration strategy, on the use of AI algorithms towards a more accurate sensor characterization and on the embedding of these algorithms for on-sensor data analysis (inference).

We also discuss the major challenges ahead of us, including the deployment of AI in the field and in the real world facing hurdles related to stability, reproducibility and other product requirements we might have. A number of future directions will be presented.

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Dr. Cecilia Carbonelli

Infineon

Cecilia is a Senior Principal - System and Algorithm Architect in the Power and Sensor System Division of Infineon

Cecilia studied Telecommunications Engineering and earned a PhD in Information Engineering from the University of Pisa in 2005. She was a Post-Doc at University of Southern California for a couple of years and then moved into industry and to Germany joining Infineon in December 2006.

She has been a System Engineer over last 15 years working on cellular standards and modem platforms, physical layer algorithms, machine learning and AI applied to sensor products.

Cecilia has three daughters, speaks three languages and in her free time enjoys reading, traveling and cooking for family and friends

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