MIM WEBINARS

AN IN-MEMORY COMPUTING SERIES

Next Talk: 07/February/2022, 4-5:30pm CET

EFFICIENT MACHINE LEARNING: ALGORITHMS-CIRCUITS-DEVICES CO-DESIGN

Prof. Hai (Helen) Li, Duke University

Following technology advances in high-performance computation systems and fast growth of data acquisition, machine learning, especially deep neural networks (DNNs), made remarkable success in many research areas and applications. Such a success, to a great extent, is enabled by developing large-scale network models that learn from a huge volume of data. The deployment of such a big model, however, is both computation-intensive and memory-intensive. Though the research on hardware acceleration for neural networks has been extensively studied, the progress of hardware development still falls far behind the upscaling of DNN models at the software level. The holistic co-design across algorithm, circuit, and device levels emerges more important for execution acceleration, energy efficiency, and design flexibility. In this presentation, we will present our studies on how to optimize the training process for sparse and low-precision network models for general platforms. We will also discuss the memristor-based computing engine designs optimized for DNN inference and training. More information about the event and the speaker:
https://www.ict.tuwien.ac.at/staff/taherinejad/MiM/next.html

Mondays in Memory (MIM) is a free biweekly webinar series open to everyone around the world and dedicated to all aspects and technologies related to in-memory computing (including, in a broader sense, near-memory computing too). MIM will be held on the first and third Monday of each month (starting in May 2021) at 4pm CET (7am Pacific time, and 10pm Beijing time).
Each webinar starts with a 40mins talk by a speaker, followed up with a 40mins questions and discussions with the speaker and two panel members. Dr. Nima Taherinejad hosts the webinars, and together with his team they organize the MiM series.

Website: http://www.ict.tuwien.ac.at/staff/ aherinejad/MiM/
Email:nima.taherinejad@tuwien.ac.at

Hai "Helen" Li is the Clare Boothe Luce Professor and Associate Chair of the Department of Electrical and Computer Engineering at Duke University. Her research interests include neuromorphic computing systems, deep learning acceleration and security, conventional and emerging memory design and architecture, and software and hardware co-design. Dr. Li served/serves as the Associate Editor for multiple IEEE and ACM journals. Dr. Li is a Distinguished Lecturer of the IEEE CAS society (2018-2019) and a distinguished speaker of ACM (2017-2020). Dr. Li is a recipient of the NSF Career Award, DARPA Young Faculty Award, TUM-IAS Hans Fischer Fellowship from Germany, ELATE Fellowship, night best paper awards and another nine best paper nominations.
For more information, please see his webpages at https://ece.duke.edu/faculty/hai-helen-li