



Online Registration

Please register on or before
29 April 2016, Friday



Machine Learning Accelerator for Personalized Data Analytics

Speakers:	Prof. Hao Yu Assistant Professor, School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore
Date:	29th April 2016, Friday
Time:	10:30 – 11:30 am (Registration starts at 10:15 am)
Venue:	Room 501 – Room 502, 5/F, Photonics Centre, 2 Science Park West Avenue, Hong Kong Science Park, Shatin, Hong Kong
Language:	English
Online Registration:	http://www.astri.org/registration-form/?pid=16148

Speaker's Biography



Dr. Hao Yu obtained Ph. D degree from electrical engineering department at UCLA. He has been a faculty at school of electrical and electronic engineering and program directors of VIRTUS (IC design), VALENS (biomedical) centre of excellence and Energy Research Institute at Nanyang Technological University (NTU), Singapore. His primary research interest is about energy-efficient accelerators, links and sensors with multi-million-USD research funding from agency and industry. He has ~180 peer-reviewed IEEE/ACM publications, 5 books, 1 best paper award of ACM Transaction, 2 keynote talks, 3 best paper award nominations, 3 student paper competition (advisor) finalists, 1 inventor award from semiconductor research cooperation, and 15 granted patents. He is associate editor and technical program committee member of many IEEE/ACM international journals and conferences. He is a senior member of IEEE and member of ACM.

Abstract

The machine-learning based data analytics to support a cloud intelligence (such as Google's α Go) has already gone beyond the scalability of the present computing technology and architecture. The current training method is mainly based on an iterative backward propagation, which has long latency running on data servers. With the emergence of autonomous cars, unmanned aerial vehicles and robotics, there is a huge demand to analyze the real-time sensed data with small latency. In this talk, we will discuss an efficient online machine-learning algorithm, where the training of neuron network is realized by a fast ℓ_2 -norm direct-solver. An according prototyping accelerator developed in FPGA, CMOS-ASIC and memristor will be discussed for both ℓ_2 -norm direct-solver and matrix-vector multiplication. Its further applications in IoT sensor network and biomedical imaging will be also addressed.