

Presents

Dr. Yiran Chen, University of Pittsburgh

Brain-Inspired Computing: The Extraordinary Voyages in Known and Unknown Worlds

Human brain is probably the most sophisticated organ that nature ever builds. Building a machine that can function like a human brain, indubitably, is the ultimate dream of a computer architect. Although we have not yet fully understood the working mechanism of human brains, the part that we have learned in the past seventy years already guided us to many remarkable successes in computing applications, e.g., artificial neural network and machine learning. The recently emerged research on “neuromorphic computing systems”, which stands for the hardware accelerations of brain-inspired computing, has become one of the most active areas in computer engineering. Our talk starts with a brief introduction of the background and motivation of neuromorphic computing systems, followed by the discussions on several hardware acceleration schemes of learning and neural network algorithms over various computing platforms and device technologies. Finally, we share our prospects on the future technology challenges and advances of neuromorphic computing.

Presenter Bio:

Dr. Yiran Chen received B.S and M.S. (both with honor) from Tsinghua Purdue University in 2005. After five years in industry, he joined University of Assistant Professor and then promoted to Associate Professor in 2014. He is now Intelligence Lab (www.ei-lab.org) at Electrical and Computer Engineering research of nonvolatile memory and storage systems, neuromorphic computing, Chen has published one book, a handful of book chapters, and more than 200 papers. He has been granted with 89 US and international patents with other 14 the associate editor of IEEE TCAD, ACM JETC, ACM SIGDA E-news and served organization committees of around 40 international conferences. He received three ISQED'08, ISLPED'10 and GLSVLS'13 and other 8 nominations from DAC, DATE, ASPDAC, etc. He also received NSF CAREER award in 2013, ACM SIGDA outstanding new faculty award in 2014, and was the invitee of 2013 U.S. Frontiers of Engineering Symposium of National Academy of Engineering (NAE).



University and Ph.D. from Pittsburgh in 2010 as leading Evolutionary Department, focusing on the and mobile systems. Dr. journal and conference pending applications. He is on the technical and best paper awards from

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University at Buffalo – North Campus – Davis 113A

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