BRINGING POWERFUL MACHINE-LEARNING SYSTEMS TO DAILY-LIFE DEVICES ABSTRACT

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ABSTRACT: While recent breakthroughs in machine-learning algorithms' inference performance promise to dramatically transform the way we live and work by enhancing our ability to recognize, analyze, and classify the world around us, such a transformation has yet to be unleashed. This is because powerful machine-learning algorithms come at a cost of prohibitive complexity and energy requirements, whereas most daily-life devices, such as drones, wearables, self-driving cars, and smartphones, have limited energy, computation and storage resources. Towards bringing powerful machine-learning systems to our daily-life devices, the Efficient and Intelligent Computing (EIC) Lab at Rice University explores techniques that highlight a holistic optimization of algorithm-, platform-, and application-level opportunities.

In this talk, I will introduce EIC lab's recently developed techniques that aim to empower daily-life devices with intelligence. Finally, I will share some exciting applications of our current research.

BIOGRAPHY: Yingyan Lin is an Assistant Professor and the Director of the Efficient and Intelligent Computing (EIC) Lab in the Department of Electrical and Computer Engineering at Rice University. Lin received a Ph.D. degree in Electrical and Computer Engineering from the University of Illinois at Urbana-Champaign in 2017. She received a Best Student Paper Award at the 2016 IEEE International Workshop on Signal Processing Systems (SiPS 2016) and the 2016 Robert T. Chien Memorial Award for Excellence in Research, and selected as a Rising Star in EECS by the 2017 Academic Career Workshop for Women at Stanford University. She is a recipient of the National Science Foundation (NSF) NeTS Award (2018) and the NSF SCH Award (2018).