THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

45TH Department of Computing
電子計算學系

COMP 45th Anniversary
Distinguished Lecture Series

The Role of Computer Architecture in Emerging Cloud Computing and Edge Computing Paradigms

► Abstract

Currently, we are facing great challenges of even-increasing demand of computing power from many computation-intensive applications, such as machine learning, and big data, and the diminishing returns of Moore's Law and Dennard Scaling of CMOS technology. Cloud computing, and more recently, edge computing have emerged as promising paradigms to address these challenges and provide performance scalability. In this talk, I will explore the central role computer architecture research plays in these new computing paradigms. I will first discuss how to greatly reduce the hardware cost of data centers by an architectural approach of utilizing inherent server redundancy. I will then present a pervasive edge computing platform where heterogeneous edge devices (e.g., smartphones, tablets, IoT and vehicles) can collaborate to sense, process data and create many novel applications at the edge. I will show how to implement such a platform by a modular, composable hardware/software architecture with specialized edge devices.

► About the Speaker

Yuanyuan Yang received the BEng and MS degrees in computer science and engineering from Tsinghua University, Beijing, China, and the MSE and PhD degrees in computer science from Johns Hopkins University, Baltimore, Maryland, USA. Dr Yang is a SUNY Distinguished Professor in the Department of Electrical & Computer Engineering and Department of Computer Science at Stony Brook University, New York, USA. She is currently on leave serving as a Program Director at the US National Science Foundation. She has served as the Associate Dean for Academic Affairs of College of Engineering and Applied Sciences at Stony Brook University and a Division Director of New York State Center of Excellence in Wireless and Information Technology. Dr Yang is internationally recognized for her contributions in parallel & distributed computer architectures and systems. She was named an IEEE Fellow in 2009 for contributions to the architecture area. Her current research interests include parallel computer architecture, network-based computing, cloud computing, edge computing and mobile computing. She has published over 400 scientific papers in leading refereed journals and conferences. Dr Yang is currently the Associate Editor-in-Chief for IEEE Transactions on Cloud Computing and an Associate Editor for ACM Computing Surveys. She has served as the Associated Editor-in-Chief for IEEE Transactions on Computers, and an Associated Editor for IEEE Transactions on Parallel and Distributed Systems. She has published over 400 scientific papers in leading refereed journals and conferences.

Prof. Yuanyuan Yang
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SUNY Distinguished Professor

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12 Aug 2019 (Mon)

11:00 am - 12:00 nn

PQ303, 3/F, Core P, PolyU

Online registration

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