

Distinguished Lecture Series

A Vision towards Pervasive Edge Computing



28 July 2021 (Wednesday),
9:30 – 10:30am GMT+8 (Hong Kong Time)



Zoom Webinar

(The webinar details will only be provided to registrants)



ABSTRACT

This talk presents an emerging pervasive edge computing paradigm where heterogeneous edge devices (e.g., smartphones, tablets, IoT and vehicles) can collaborate to sense, process data and create many novel applications at network edge. We propose a data centric design where data become self-sufficient entities that are stored, referenced independently from their producers. This enables us to design efficient and robust data discovery, retrieval and caching mechanisms. We also consider secure data caching by applying blockchain technology to the edge, and architecture support for edge nodes by FPGA to combat the heterogeneity among edge nodes. The future research agenda including scalable data discovery, cache management, autonomous processing, trust, security and privacy, incentives and semantic data naming will be discussed.

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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 parallel and distributed computing. Her current research interests include parallel computer architecture, network-based computing, cloud computing, edge computing and mobile computing. She has published over 460 scientific papers in leading refereed journals and conferences. Dr. Yang is currently the Editor-in-Chief for IEEE Transactions on Cloud Computing and an Associate Editor for ACM Computing Surveys and IEEE Transactions on Parallel and Distributed Systems. She has served as the Associated Editor-in-Chief for IEEE Transactions on Computers and IEEE Transactions on Cloud Computing, and an Associated Editor for IEEE Transactions on Computers and IEEE Transactions on Parallel and Distributed Systems.



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