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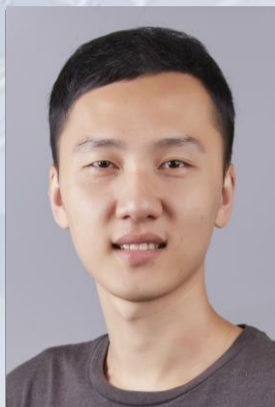COMPUTER SCIENCE
計算機科學系

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# Department of Computer Science

## Dr. Guanghui Zhang

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Department of Computer Science and Engineering
The Chinese University of Hong Kong

**Register Now**

📅 **Date: 9 September 2021 (Thursday)**
🕐 **Time: 10:00am – 11:00am**
🖥 **Registration: http://bit.ly/bucs-ereg**
(*Zoom details will only be provided to registrants)

# On Mobile Adaptive Streaming with Learning Awareness

## 💬 ABSTRACT

Video streaming is now ubiquitous on the mobile Internet. This motivated intense research in adaptive streaming algorithms to tackle mobile networks' fluctuating conditions. Our investigations revealed that while existing learning-based algorithms can perform well in their intended operating environments, their performance can degrade substantially in other environments. In this talk, I will introduce a novel Ensemble Adaptive Streaming (EAS) paradigm to tackle the challenge. Specifically, as opposed to training one single streaming algorithm for all network conditions, we argue that different network conditions require different algorithms. We thus introduce the notion of network differentiators to segregate the network conditions into different classes where each class has its own adaptation algorithm optimized specifically for it. At runtime, an EAS mobile streaming client selects the matching adaptation algorithm using the same network differentiator on a per video session basis. EAS not only outperformed state-of-the-art algorithms substantially, but also exhibited remarkable robustness over time, location, mobile operators, as well as quality-of-experience metrics.

## 📝 BIOGRAPHY

Dr. ZHANG Guanghui is currently a Post-Doctoral Fellow with the Department of Computer Science and Engineering, The Chinese University of Hong Kong, Shatin, Hong Kong. From 2020 to 2021, he was a Post-Doctoral Fellow at the Centre for Advances in Reliability and Safety, Hong Kong Polytechnic University, Kowloon, Hong Kong. Before that, he received the Ph.D. degree in Information Engineering from the Chinese University of Hong Kong, Shatin, Hong Kong, in 2020, and the M.S. degree in Electronic Science and Technology from Peking University, Beijing, China, in 2016. His research interests lie in communications and networking, video streaming, and machine learning.