THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

Department of Computing
電子計算學系

Research Seminar

Video Analytics Acceleration on the Edge

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Date : 20 November 2020 (Friday)
Time : 2:30 p.m. - 3:30 p.m.

▶ Abstract

Recent advances of deep learning have substantially improved the accuracy of video analytics. To support user experience, video analytics have stringent delay requirements. There are debates on the topic of edge-cloud video analytics, i.e., whether video analytics should be executed in the edge or in the cloud, so that the delay requirement can be satisfied. In this talk, I will talk about how the network-induced delays affect the edge-cloud video analytics delay. Particularly, I will first discuss whether the video analytics workload in an edge device can introduce a nodal delay in the traffic processing of the NIC. I will present an approach that leverages the idle computation resources of the NIC to video analytics acceleration. Next, I will discuss how the transmission delay affects video analytics and present an approach that allows partitioned video analytics processed at both the edge and cloud to adapt to bandwidth variation automatically. Finally, I will discuss some future research on video analytics in terms of queuing delay and propagation delay.

▶ About the Speaker

Chuang Hu is currently a Research Assistant Professor at the Department of Computing, The Hong Kong Polytechnic University. He received both his B.S. and M.S. degrees from Wuhan University. He obtained his Ph.D. degree from The Hong Kong Polytechnic University in 2019. His current research interests include Edge Learning, Distributed Machine Learning, and Internet of Things. He has published several papers in high-impact journals like IEEE TPDS, and ACM TOSN, top conferences including IEEE INFOCOM, IEEE ICDCS, and emerging conferences such as ACM Buildsys.

ALL are welcome!

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