Resource-Aware Crowdsourcing in Wireless Networks

Photos/videos obtained via crowdsourcing can be used in many applications. Due to the limitations of communication bandwidth, storage and processing capability, it is a challenge to transfer a large number of crowdsourced photos/videos through wireless networks. To address this problem, we quantify the quality of crowdsourced photos/videos based on the accessible geographical and geometrical information (called metadata) including the smartphone’s orientation, position and all related parameters of the built-in camera. From the metadata, we can infer where and how the photos/videos are taken, and then only transmit the most useful photos/videos. In this talk, I will present two metadata-based projects: SmartPhoto which focuses on selecting photos to achieve better coverage under resource constraints, and VideoMec which focuses on supporting scalable search and retrieval of crowdsourced videos from widely distributed mobile devices.

Brief Bio: Guohong Cao (http://www.cse.psu.edu/~gcao) received his PhD degree in computer science from the Ohio State University in 1999. Since then, he has been with the Department of Computer Science and Engineering at the Pennsylvania State University, where he is currently a Professor. His research interests include wireless networks, mobile systems, Internet of things, wireless security and privacy. He has published more than 200 papers which have been cited over 17000 times, with an h-index of 66. He has served on the editorial board of IEEE Transactions on Mobile Computing, IEEE Transactions on Wireless Communications, IEEE Transactions on Vehicular Technology, and has served on the organizing and technical program committees of many conferences, including the TPC Chair/Co-Chair of IEEE SRDS'2009, MASS'2010, and INFOCOM'2013. He was a recipient of the NSF CAREER award in 2001. He is a Fellow of the IEEE.

Free Seminar - Open to the Public

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University at Buffalo - North Campus - Davis 113A