



Spring 2017 Seminar Series

Sustained Mobile Visual Computing: A Human-Centered Perspective

FRIDAY MARCH 10, 2017

11:00 AM – HEC 450

Visual content is the most natural abstraction of the real world. Interacting with various types of visual content via mobile devices at anytime and anywhere promises the future of mobile computing. Such sustained mobile visual computing will revolutionize cyber-physical systems, especially the cyber-human interaction, in numerous applications from education and entertainment to infrastructure and healthcare monitoring. However, today's systems, highly optimized for static content or stationary devices, fail to achieve the energy efficiency required by this long-term vision. In this talk, I will present a human-centered perspective to bridge this gap by understanding the human perception of the dynamic visual content under the mobile context. I will focus on the end-to-end video pipeline, and use sustained mobile video delivery and display as two examples to demonstrate the benefits of the human-centered perspective. This work has resulted in prototypes that save mobile energy at scale as well as new algorithms and models that enrich the visual computing theory. Some ideas of this work are also being standardized by MPEG. I will end my talk by discussing my future research directions to pursue sustained mobile visual computing in other types of visual content and computing tasks.

Zhisheng Yan



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Zhisheng Yan is a Ph.D. candidate in the Department of Computer Science and Engineering at the State University of New York at Buffalo. His research interests include mobile computing, networked systems, and human-centered computing. His current research aims at enabling sustained mobile visual computing for cyber-physical systems. His interdisciplinary research has led to cross-community publications in conferences such as MobiCom and MM, and journals such as TMC and TCSVT. His research won the best student paper runner-up award in IEEE HealthCom 2012. He received the 2016 David M. Benenson Memorial Scholarship, the most prestigious award in the School of Engineering and Applied Science at SUNY Buffalo granted to 4 recipients among 8 different departments.