Seminar Series

Large Scale Search, and Computational Cameras, for Recognition

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Abstract
This talk addresses visual recognition in two complementary ways. Online collections (YouTube, etc.) of open source video present a “big visual data” challenge for recognition systems. Since the videos contain multiple cues (objects, motion, audio, etc.) whose reliability varies across the corpus, I present an algorithm performing score fusion in order to detect semantically-rich events from a large, diverse video collection. Having thus addressed accuracy, the speed of detection is improved using feature indexing which prioritizes those video clips which are likely to be detected as positive instances.

In the second half of the talk, I discuss the use of computational imaging to improve the performance of recognition systems where we have control over camera design. In particular, I discuss the use of coded exposure to capture usable iris images in cases where a subject is moving during exposure. Finally, the talk will demonstrate the utility of coded exposure imaging to iris-based biometric recognition, and illustrate the challenges of using black box recognition methods on computational images.

Biography of Speaker
Scott McCloskey is currently a Principal Research Scientist at Honeywell’s ACS Labs, where he has served as the principle investigator for several government-funded projects from DARPA, IARPA, and the Biometrics Identity Management Agency. Dr. McCloskey received his PhD in Computer Science from McGill University in 2008, a MS in Computer Science from the Rochester Institute of Technology in 2002, and a BS in Computer Science and Math from the University of Wisconsin-Madison in 1998. His research interests include computer vision, computational photography, and biometrics. As an active part of the computer vision research community, Dr. McCloskey has served as a panelist for the National Science Foundation (NSF), and as reviewer for numerous conferences and journals.