COMPUTER SCIENCE RESEARCH SEMINAR

PPG-based Finger-level Gesture Recognition Leveraging Wearables

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Friday, March 23rd at noon in room R15, Engineering Building

Abstract: Existing solutions in gesture recognition require dedicated devices (e.g., video cameras or IR sensors) or leverage various signals in the environments (e.g., sound, RF or ambient light), this talk introduces the first PPG-based gesture recognition system that can differentiate fine-grained hand gestures at finger level using commodity wearables. In particular, this innovative system harnesses the unique blood flow changes in a user's wrist area to distinguish the user's finger and hand movements. By leveraging the unique characteristics of the motion artifacts to PPG, this system can accurately extract the gesture-related signals from the significant background noise (i.e., pulses), and identify different minute finger-level gestures, which could facilitate many emerging human-computer interactions (e.g., sign-language interpretation and virtual reality).

Bio: Tianming Zhao is a Ph.D. candidate advised by Dr. Yan Wang in the Department of Computer Science at SUNY Binghamton. His research interests are in Mobile Computing & Applications, and Smart Healthcare & Security.

Co-sponsored with GSO and partially paid for by student activity fees.

Pizza will be provided!