Designing self-training and monitoring systems for a diverse group of users using physiological measurements

Dr. Ji-Eun Kim
Industrial and Systems Engineering
University of Washington
Seattle, WA

Abstract: Recent advances in wearable and sensing technologies have enabled users to monitor their biomedical signals in real time, regardless of location, at an affordable price. For example, a user can track their heart rate using their smartwatch and monitor their eye movements using a camera incorporated into their smartphone or laptop. However, most biosensing systems neglect the great variety in users’ physiological responses and their relationships to their mental activities; instead, these systems are designed to meet the needs of “average users” who might account for the peak in the normal distribution of the population. Quantitative modeling of individual differences, in which physiological responses are used to predict an individual’s performance, expands the spectrum of the target population for real-time training and monitoring systems. This seminar will introduce several projects that are being conducted in the Human and Systems (HAS) Laboratory.

Bio: Ji-Eun Kim is an assistant professor in the Department of Industrial and Systems Engineering at the University of Washington, Seattle. Her research spans the fields of human performance modeling, neuroergonomics, and cognitive engineering, with the primary goal of designing work systems that better accommodate individual differences. Current projects in her laboratory include human factors considerations for healthcare systems and cyberlearning systems. She holds a Ph.D. in industrial engineering from the The Pennsylvania State University, an M.S. in cognitive psychology from Korea University, and a B.S. in biology from Sogang University.