



Providing Better Healthcare Through Systems Engineering: Seminars and Discussions

Using Wearable Motion Sensors for Augmenting Occupational Therapy Assessment *Leia Stirling, PhD*

Monday December 2 at 4:30PM in 1123 LBME



Wearable sensors provide opportunity to augment occupational therapy through telemedicine. However, there are several design challenges embedded in creating an at-home telemonitoring system that can visualize the complex biomechanical data required for clinical decision making. These challenges include defining performance metrics that correspond to clinical needs and being able to robustly make these measures in a natural environment. In this talk, we describe quantified metrics of motion coordination, balance strategy, and torso compensatory motions. These metrics were informed by clinical observations and were features monitored and synthesized to adapt the selected patient activities.

Leia Stirling is an Associate Professor in Industrial and Operations Engineering at the University of Michigan. Her research quantifies human performance and human-machine fluency to assess performance augmentation, advance exoskeleton control algorithms, mitigate injury risk, and provide relevant feedback to subject matter experts across domains. She received her B.S. (2003) and M.S. (2005) in Aeronautical and Astronautical Engineering from the University of Illinois at Urbana-Champaign, and her Ph.D. (2008) in Aeronautics and Astronautics from MIT. She was a postdoctoral researcher at Boston Children's Hospital and Harvard Medical School (2008-2009), on the Advanced Technology Team at the Wyss Institute for Biologically Inspired Engineering (2009-2012), then an Assistant Professor at MIT (2013 – 2019). She joined the faculty at the University of Michigan in 2019.

1123 LBME is room 1123 in the Ann & Robert H. Lurie Biomedical Engineering Building (LBME). The street address is 1101 Beal Avenue. A map and directions are available at: <http://www.bme.umich.edu/about/directions.php>.

This seminar series is presented by the U-M Center for Healthcare Engineering and Patient Safety (CHEPS): Our mission is to improve the safety and quality of healthcare delivery through a multi-disciplinary, systems-engineering approach.

For additional information and to be added to the weekly e-mail for the series, please contact geneh-kim@umich.edu.

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