

## CHAI Seminar Series

*RIT-only event. Refreshments will be served.*

**DATE:** **Monday, March 14, 2022, 12:00-1:00 PM**

**SPEAKER:** **Celal Savur**  
Ph.D. Candidate, RIT Electrical and Computer Engineering

**TITLE:** **A Physiological Computing System to Improve Human-Robot Collaboration by using Human Comfort Index**

**IN-PERSON:** **Student Alumni Union, Room/Location: SAU-1510 1829 Room**



**Abstract:** Fluent human-robot collaboration requires a robot teammate to understand, learn, and adapt to the human's psycho-physiological state. Such collaborations require a physiological computing system that monitors human physiological signals during human-robot collaboration to quantitatively estimate a human's level of comfort. Existing ISO standard does not take physiological computing into account. In order to include physiological computing in HRC, we developed a framework for estimating the human comfortability level during HRC, the comfort index (CI), using physiological signals. Once the CI is estimated then the robot can change its behavior based on this estimate. The CI Estimation System

framework developed in CMCR Lab has enabled several human-subject experiments in the recent years. In this talk, the key aspects of the experimental designs, the challenges and solutions for data collection, an alternative way of collecting subjective responses, and how CI is estimated using circumplex model will be presented.

**Bio:** Celal Savur is a Ph.D. candidate in the Electrical and Computer Engineering program at Rochester Institute of Technology. He received his B.S. in Computer Engineering from the Harran University in Turkey in 2010. After completing his B.S degree, he worked as Software Engineer. In 2012, he was awarded a scholarship from the Turkish Government to pursue his master's and Ph.D. degrees. He received his M.S in Electrical Engineering in the field of control and robotics from RIT. He also taught two courses: EE-536/636 (Bio-Robotics/Cybernetics) and EE-346 (Advanced Programming, C++). His current research interests are physiological computing, collaborative robotics, signal processing, machine learning, and deep learning.