THE OHIO STATE UNIVERSITY

CSEL innovation at the intersection of people, technology, and work.

Fully Funded Ph.D. Position in the Cognitive Systems Engineering Lab (CSEL)

The Cognitive Systems Engineering Lab (CSEL) at the Ohio State University has a **fully funded Ph.D. position** with a specialization in Human Systems Integration. The Ph.D. student will work with Dr. Martijn IJtsma on an NSF-sponsored project to develop novel modeling techniques for analyzing and designing collaborative behavior in human-robot teams. Application domains include disaster response operations and spaceflight operations. **The start date is January 2024 (start of the spring semester).**

Interested candidates should email Dr. IJtsma at ijtsma.1@osu.edu with a CV or resume or apply directly to the graduate program of the Department of Integrated Systems Engineering and mention Dr. IJtsma has the faculty of interest. Review of applications begins September 15th and will continue until the position is filled. The position is open to domestic and international students.

Qualifications

(1) A bachelor's or master's degree in integrated systems engineering, aerospace/ mechanical engineering, computer science, data science, or similar field.
(2) Prior research experience in an area related to human factors and/or cognitive systems engineering.
(3) Experience with programming, modeling and simulation, and/or quantitative analysis.
(4) Experience with technical and academic writing and presenting.

About the Research

The deployment of smart robots promises increased safety, productivity, and capability in domains such as disaster and emergency response, ground mobility, manufacturing, aviation, and space operations. However, field research and experiences of robotic operations show that current robots, in general, insufficiently support cooperation with human problem holders. For example, rigid and/or fragile robotic behaviors can impose excessive overhead on human workers to intervene and (re-)direct the robot. The research aims to improve human-robot collaboration by combining theories from cognitive and social sciences with techniques from graph theory and agent-based modeling and simulation.

About the Cognitive Systems Engineering Lab

The Cognitive Systems Engineering Lab (CSEL) develops knowledge, methods, and tools to guide the design of systems at the intersection of people, technology, and work in complex settings. As researchers and designers, we identify patterns and leverage new technologies to support dynamic decision-making in the face of anomalies, uncertainty, stress, and even intentional deception by adversaries. Our technological innovations are multidisciplinary, incorporating human-centered design, computational modeling and simulation, data analytics, and other fields into our own methods.

More information can be found at CSEL's website and Dr. IJtsma's personal page. For questions about the position, please email Martijn IJtsma at ijtsma.1@osu.edu .