Spring / Summer Undergraduate Student Research: Computational Modeling of Human-AI/Robot Joint Activity

Dr. Martijn IJtsma is seeking two undergraduate research assistants, about 10 hours per week, for projects underway in the Ohio State University's Cognitive Systems Engineering Lab (csel.engineering.osu.edu).

Position Description: This research projects will develop and apply novel modeling techniques for analyzing and designing for coordination between humans and automated systems. These models will help uncover the causes and effects of coordination costs in human-automation interaction and improve safety and efficiency of future systems that involve collaboration between human and AI/robotic capabilities, such as disaster relief, air transportation, and ground mobility. The student will support the development of a C++ and Python-based modeling framework.

Duties: software development; code implementation in C++ and Python; writing and editing of support documentation; basic lab chores (management and organization of the lab, lab inventory); keep lab records; participate in weekly lab meetings and journal clubs. In time, students will have the possibility to be trained in more complex research tasks.

Required Applicant Information
Resume including a brief letter describing prior research and programming experience.

Required or Desired Skills
Strong candidates will have experience in one or more of the following areas: computer programming, cognitive systems engineering, data science, computer modeling, robotics, or human factors.

The student should be able to work with and develop C++ and Python code to analyze graph representations of human-automation interaction. A base framework has already been set up, the student is expected to extend and modify the framework to include new visualizations and analyses.

Faculty Member Lead: Martijn IJtsma

Application Deadline: March 15, 2024

Contact: Dr. Martijn IJtsma by email ijtsma.1@osu.edu.

Desired Majors: Integrated Systems Engineering, Computer Science and Engineering, Mechanical and Aerospace Engineering, Applied Math. The position is also open to majors not on the list.

Hours per Week: flexible yet the expectation is about 10 in the spring semester. There is the option to extend the position to 20-30 hours/week in the summer semester.

Pay: $15 per hour