Mobina Amrollahi

GitHub LinkedIn Email Website LeetCode

Education

Iowa State University, Ames, IA
Ph.D. in Computer Science & Industrial Engineering *GPA: 3.87/4.00* Aug. 2028 (Anticipated)
M.Sc.in Computer Science & Industrial Engineering Aug. 2026 (Anticipated)
Related Courses: Design & Analysis of Algorithms, Theory of Computation, Analysis, Theory of Linear Algebra, Advanced Topics in Machine Learning, Linear Programming.

Sharif University of Technology, Iran 2018 – 2023
B.S. in Industrial Engineering

Publications

Working Papers Under Review

- **Amrollahi, M.**, Goldman, A., & Liu, J. *Measuring and Understanding Trust in Motion: Behavioral Archetypes in Human-Automated Guided Vehicle Interactions*.
- Gomez-Hernandez, A.*, **Amrollahi, M.***, Entezarizarch, E., Liu, J., & Yang, J. *A Systematic Review of Human-Centered Adaptive Systems: Design, Implications, and Future Directions*. *(*Equal contribution)*

Conference Proceedings

- **Amrollahi, M.**, Wangira, R., & Liu, J. (2025). *Analysis and Modeling of Worker Trust in Automated Guided Vehicles for Manufacturing Workplace*.
  In **Proceedings of the 69th Human Factors and Ergonomics Society Annual Meeting (HFES)**.

Research Experiences

Iowa State University, Human-centered Interactive Autonomy 2023 – Present
Graduate Research Assistant
Mentor: Jundi Liu
Project: Characterizing Human Decisions in Shared Spaces with Autonomous Vehicles

- Developed a simulation framework for modeling interactions between humans and Automated Guided Vehicles in shared industrial spaces.
- Processed raw user coordinates, eye gaze data, and automated guided vehicle coordinate data; Extracted features such as Fréchet distance, fixation rate, and user's relative speed.
- Analyzed and predicted human crossing behavior using semi-supervised learning to infer intent from physiological and contextual features.

Project: A Systematic Review of Human-Centered Adaptive Systems: Design, Implications, and Future Directions

- Reviewed existing adaptive system applications to evaluate their effectiveness, identify implementation gaps, and explore how they maintain human involvement while leveraging automation.

Selected Course Projects

Iowa State University 2023 – Present
Project: Identifying Damage Levels in a Post-Hazard Scenario Using Semantic Segmentation
COMS 6730 – Advanced Topics in Machine Learning

- Implemented the Segmenter model for hurricane damage assessment, achieving the highest performance across all metrics in a comparative analysis against PSPNet, DeepLabV3+, and Attention U-Net.

Report Code

Project: Optimal Path Planning for an Omnidirectional Robot
COMS 5760 – Motion Planning for Robotics and Autonomous Systems

- Evaluated and compared RRT and RRT* algorithms for motion planning of an omnidirectional robot, demonstrating the trade-off between rapid feasibility and asymptotic optimality.
  Report Code

Selected Honors

2025 Alphonse Chapanis Award finalists of the 69^{th} HFES International Annual Meeting
2025 3rd Place, 12th Annual IMSE Student Research Symposium, Iowa State University
2025 NSF IISE Annual Conference Student Travel Award (NSF Award ID CMMI-2511912)
2024 1st Place, 12th Annual IMSE Student Research Symposium, Iowa State University
2023 Harold and Shirley Reihman Graduate Scholarship, Iowa State University
2023 UMN Provost Fellowship, University of Minnesota

Teaching Experiences

Sharif University of Technology, Iran
Head Teaching Assistant, IE 21776: Information Technology Fall 2023

- Managed and coordinated 8 teaching assistants.
- Proofread and graded homework and final exam for 60 students.

Teaching Assistant, IE 21972: Management Information Systems Fall 2023

- Conducted tutoring sessions; designed and graded homework and projects.

Service

CyMath, Ames, IA
Volunteer Tutor March 2025 – Present

- Providing one-on-one math tutoring and mentorship to 6th–8th grade students.

Skills

Programming: Python (PyTorch, Tensorflow), C++, R, LaTeX
Languages: English (TOEFL iBT: 107/120)