***Mohsin Hossain*** E.Lansing| MI714-396-7423 | hossai34@msu.edu | linkedin.com/in/hossai34

## EDUCATION

**Michigan State University,** College of Engineering, E.Lansing, MI *August 2022-May2026*
*Bachelor of Science, Computer Science, Minor in Business, Honors College* GPA: 3.74 (Deans List Honor)
**Certifications:** Google Cybersecurity Professional Certificate

## WORK EXPERIENCE

**Research Assistant – Behavioral Agent-Based Modeling,** *Michigan State University* *May-August2025*
•Designed and implemented agent-based simulations in Python to model international conflicts using behavioral mechanisms like Q-learning, memory, and reputation dynamics.
•Developed interactive visualizations and Streamlit apps to analyze state behavior, escalation patterns, and policy outcomes across multiple case studies.
•Conducted in-depth literature reviews on game theory, conflict modeling, and behavioral IR; contributed to weekly slide decks and paper drafts connecting empirical simulations to theoretical insights.

**Resident Assistant (RA),** *Hubbard Hall, Michigan State University* *Aug2024-Present*
• Manage a residential floor of 60+ students, fostering a safe and inclusive living environment.
• Resolve conflicts, addresses resident concerns, and supports students' personal and academic development.
• Organize monthly events to build community and promote wellness, diversity, and engagement.

**Undergraduate Learning Assistant – MTH Department**, *Michigan State University* *September 2024 –Present*
• Conduct weekly recitation sessions to reinforce lecture material, focusing on algebra and problem-solving strategies.
• Host weekly help room sessions, graded assignments, and proctored exams.

**Undergraduate Learning Assistant – CSE Department**, *Michigan State University* *September 2024 –May2025*
• Taught introductory Python programming by guiding students through labs and presentations on core coding concepts.
• Collaborated with instructors to enhance course content and foster an engaging learning environment.

## TECHNICAL PROJECTS

**TurtleBot Convoy Simulation in Gazebo** *ROS | Gazebo | TurtleBot | C++*
• Developed a Gazebo simulation featuring two TurtleBots in a leader-follower convoy setup, with the leader using sensors and a camera for environment navigation.
• Programmed follower bot to track leader and enabled coordination via ROS topics and services.
• Created obstacle-rich environments to test navigation and convoy behavior under dynamic conditions.

**Web Defacement Attack Simulation** *Ettercap | DNS Spoofing | Homebrew*
• Developed a controlled proof-of-concept demonstrating DNS spoofing to redirect HTTP requests to a malicious server
• Utilized Ettercap to scan the network, identify victim IP addresses, and manipulate DNS responses to redirect traffic to a fake webpage.
• Ensured ethical execution by conducting the attack in a secure, controlled environment following demonstrating how such vulnerabilities can be identified and mitigated to improve network security awareness.

**Machine Animation Project** wxWidgets | C++ | Object-Oriented Programming
• Developed an interactive GUI application simulating two animated machines with synchronized components using wxWidgets.
• Implemented event-driven programming and user interactions to create a responsive, real-time animation experience.
• Applied object-oriented principles to design modular and maintainable code, supporting scalability and future enhancements.

**TurtleBot Camera Calibration and Traffic Sign Recognition** ROS | TurtleBot | YOLO | Roboflow | C++ | Linux
• Calibrated TurtleBot's camera system within ROS to enhance visual accuracy for detecting traffic signs.
• Integrated YOLO deep learning models trained on Roboflow-annotated datasets for real-time recognition of stop signs.

## TECHNICAL SKILLS

•**Programming Languages:** Python, C++, MATLAB, SQL, JavaScript, R
•**Frameworks & Libraries:** Streamlit, PyTorch, TensorFlow, NumPy, Pandas, Matplotlib, Scikit-learn, OpenCV, Mesa, ROS, wxWidgets
•**Software & Tools:** Git, Linux, Jupyter Notebook, VS Code, MATLAB Image Processing Toolbox, Gazebo, SEIM, Anaconda, Microsoft 365
•**Modeling & Simulation:** Agent-Based Modeling (Mesa, Streamlit), Game Theory Models, Q-Learning, Reinforcement Learning, Civil Violence & Coordination Models, Machine Learning, Interactive Data Visualization