Tasmia Rahman

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Education

Honors College, Michigan State University, East Lansing, MI **Expected Graduation: May 2026**
Bachelor of Science in Computer Science *GPA: 3.94; Minors: Data Science and Business*

Relevant Coursework

- Data Structures
- Software Design
- Computer Vision
- Autonomous Vehicles
- Artificial Intelligence
- Machine Learning
- Computer Systems
- Computer Architecture

Experience

BESFEM **Mar 2025 – Present**
Undergraduate Research Assistant *East Lansing, MI*

- Translated code written in C++ to Python to perform battery electrode simulation using the MFEM library.
- Used SWIG to create Python wrappers for existing C++ functions for visualizing battery simulation results.
- Developed automated workflows for simulation setup and result analysis using Python, Bash, and Git, enhancing reproducibility and efficiency in battery research.
- Presented research findings at MIDSURE, showcasing simulation results and methodology to a wider academic audience.

CMSE Department, Michigan State University **May 2025 – Present**
CMSE Student Tech Assistant *East Lansing, MI*

- Maintain and perform analytics on the CMSE website to improve user experience and engagement.
- Developed a tagging library with Python to help 10+ instructors organize course material and making retreival easier.
- Troubleshooting and fixing hardware issues with the computers in the CMSE department.
- Programming and designing new pages to be added to the CMSE Department.

Data Science and Engineering Lab **Oct 2024 – Mar 2025**
Undergraduate Research Assistant *East Lansing, MI*

- Worked on a LLM based web tutor system aimed at teaching mathematics to middle school children
- Worked with a MongoDB database to update and reset the progress of users once a module is finished or restarted
- Collaborated with team members using version control systems such as Git to organize modifications and assign tasks.
- Created an equation tool which was connected to a LLM to help users figure out the answer with personalized assistance

Projects

Sparty in the Box | *C++, wxWidgets* **December 2024**

- Developed a Jack in the Box with C++ and wxWidgets where a character (Sparty) pops out after a certain time
- Added a music box animation to make the character pop out while song is being played
- Developed an adapter class for the Jack in the box in an existing codebase with customizable start frames
- Developed a keyframe-based movie system with character interactions and XML-based load/save functionality.

Movie Recommendation System | *Python, Numpy, Pandas, Matplotlib* **November 2024**

- Developed a movie recommendation system with Python using K Nearest Neighbors
- Implemented data preprocessing and feature engineering on user rating datasets to optimize recommendation accuracy
- Evaluated model performance using a confusion matrix and fine-tuned KNN parameters for improved recommendations.

Technical Skills

Languages: Python, C, C++, HTML/CSS, JavaScript, SQL, R, ARM
Developer Tools: VS Code, IntelliJ, Google Cloud Platform, Android Studio
Technologies/Frameworks: Linux, Docker, GitHub, OpenCV, WordPress, React, React Native, Express, Node.js, PyTorch

Leadership / Extracurricular

Resident Assistant **Spring 2025 – Present**
Holmes Hall, Michigan State University

- Fostered an inclusive and supportive community for over 50 residents, promoting personal growth and engagement
- Planned and executed educational and social programs, helping residents balance academics, wellness, and campus involvement
- Collaborated with other RAs and hall staff to address conflicts, provide guidance, and ensure residents' well-being and safety