

Sakib Hassan

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EDUCATION

University at Buffalo, B.S. Computer Science

Anticipated December 2025

RESEARCH ASSISTANT

Professor: Wenyao Xu – University at Buffalo

December 2022 – May 2023

- Created a message broker system that serves as a bridge between user interfaces and IoT devices.
- Designed the system to efficiently relay data and commands, decoupling producers, and consumers.
- Implemented a data flow from IoT devices to user interfaces and a command flow from user interfaces to IoT devices.
- Python was used to build the server, with the websockets library—suitable for workloads with a lot of I/O—built on top.

PROJECTS

September 2023

Semantic Search Chatbot

- Developed an AI-driven text analysis tool that exhibits the capability to proficiently handle both PDF and textual data formats.
- Integrated Langchain and applied OpenAI's embeddings and LLM APIs.
- Empowered users with the ability to pose targeted inquiries pertaining to the content for data extraction and in-depth analysis.
- Optimized database performance using SQL techniques, resulting in faster query times and improved system reliability.

Checkout Device

October 2022

- Revamped GUI, improving checkout efficiency by 50% via direct item scanning and payment.
- Implemented inheritance and polymorphism for versatile object handling.
- Utilized Scala and IntelliJ IDEA for a stable, user-friendly application.

Portfolio Website

<https://e-portfolio-bay-nine.vercel.app/>

- Created website using HTML, CSS, and JavaScript
- Has responsive design, animations, transitions
- Uses industry best practices

AWARDS

Financial Game

November 2022

- Achieved recognition as the winner of the UB Hacking Best Freshman Hack award and the M&T Tech - An Innovative Way to Promote Financial Understanding and Well-Being award.
- Created a game that helped users learn financial knowledge and skills, resulting in an increase in users' financial literacy and well-being.
- Utilized HTML and CSS to design and build the website and used Unity Game engine and itch.io to create and embed the game.
- Technologies used: HTML5, CSS, C#, Unity, itch.io.

TECHNICAL SKILLS

- Proficiency in programming languages such as Python, JavaScript, C, MIPS and Scala.
- Strong foundation in object-oriented programming concepts, and memory allocation.
- Experience with data structures and algorithms like Greedy Algorithm and Gale-Shapely.