

Sakib Hassan

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EDUCATION

University at Buffalo

Bachelor of Science in Computer Science, Minor in Mathematics

Buffalo, NY

Jan. 2022 – Dec. 2025

EXPERIENCE

Undergraduate Research Assistant

Jan. 2023 – May 2023

University at Buffalo

Buffalo, NY

- Developed a React and Web Socket-based STREAM app for real-time 3D visualization of sensor data, with dynamic user interaction capabilities.
- Implemented secure user authentication using Amazon Cognito, enhancing application security and data protection.
- Designed a DynamoDB data storage solution with Python scripts for efficient data transformation and epoch-based querying.
- Constructed a high-performance WebSocket server in Python on EC2 to enable seamless IoT device and interface communication.

PROJECTS

Financial Game | *HTML, CSS, C#, Unity, Itch.io*

Nov. 2022

- * Demonstrated exceptional innovation in financial literacy enhancement by winning the UB Hacking Best Freshman Hack Award.
- * Created an engaging educational game that garnered the M&T Tech Award for its effectiveness in improving financial understanding and well-being.
- * Employed HTML and CSS for sophisticated website design and construction, and expertly utilized Unity Game Engine and itch.io for developing and integrating an educational game platform.

Semantic Search Chatbot | *Streamlit, Python*

Sep. 2023

- * Developed an AI-driven text analysis tool that exhibits the capability to proficiently handle both PDF and textual data formats.
- * 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.
- * Integrated Langchain and applied OpenAI's embeddings and LLM APIs.

Conway's Game of Life | *C*

Feb. 2023

- * Engineered a C-based simulation of Conway's Game of Life, complete with cell evolution logic and a graphical interface for generation tracking.
- * Refined the simulation to efficiently handle expansive grids and extensive generation sequences, showcasing advanced algorithmic solutions.
- * Strengthened expertise in complex system management and problem-solving through meticulous performance optimization and debugging.

BPD Crime Data Visualizer | *HTML, JavaScript (AJAX GET/POST), Python (Plotly, Bottle)*

May. 2022

- * Analyzed and visualized over 10,000 Buffalo Police Department crime data entries, highlighting trends by year, day, and hour.
- * Created interactive, user-friendly visualizations with date filters using JavaScript, HTML, and Plotly.
- * Developed a streamlined backend with JSON integration and Python Bottle, optimizing data handling and functionality.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, Scala, JavaScript, HTML/CSS, Assembly

Frameworks: React, Node.js, Flask, JUnit, WordPress, Material-UI, FastAPI

Developer Tools: Git, GitHub, Unity, Jupyter Notebook, Unix, Visual Studio, PyCharm, IntelliJ, Emacs, Xpra

Libraries: pandas, NumPy, Matplotlib, Plotly, Bottle, AJAX