# ROHAN BANERJEE

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## SKILLS

**Skills:** Agile, ASP.NET, AWS, DevOps, C#, C/C++, CockroachDB, Computer Networking, Computer Vision, CUDA, Data Analysis, Django, Electron.js, Golang, Firebase, Python, Node.js, Linux/Unix, Bash, Shell, PowerShell, MongoDB, iOS/Swift, JavaScript, jQuery, Jupyter, Keras, MySQL, .NET, OpenCV, Pandas, Quality Assurance (QA), React.js, React Native, REST APIs, Software Testing, SQL, TCP/IP, Flutter, CI/CD, Git, HTML/CSS, Flask, API, SLURM, Jest, MATLAB, machine learning, Pytorch, Ruby, Figma, Shell, Docker

## EDUCATION

**Michigan State University**                                                                            **August 2022 - December 2025**
*Bachelor's, Computer Science*                                                                                                    *GPA: 3.6*

## PROFESSIONAL EXPERIENCE

**Michigan State University**                                                                                    **East Lansing, MI, USA**
*Research Assistant*                                                                                                      *June 2023 - Present*
- Collaborated on data classification and performance testing of SLURM job scripts in High-Performance Computing (HPC) on Linux, alongside Dr. Xiaoge Wang.
- Developed benchmark software and a Jest testing framework for analyzing Compute Unified Device Architecture (CUDA) modules and OnDemand development tools ( VNC and server-based apps).
- Engineered with Dr. Nicholas Panchy to develop a web server application to integrate Open Refine into HPCC using Ruby, JavaScript, and Shell.
- Assisted in migrating server-based applications from CentOS to Ubuntu, ensuring compatibility with the new operating system.

**TechSmith Corporation**                                                                                       **East Lansing, MI, USA**
*Software Testing Intern*                                                                                           *May 2023 - August 2023*
- Enhanced product quality through effective testing strategy, planning, and execution.
- Developed proficiency in software testing practices, including bug creation/logging, feature testing, exploratory testing, and Agile collaboration, contributing to the resolution of a substantial number of defects and ensuring software functionality and reliability.
- Collaborated on creating and implementing IPV6-compliant testing guidelines, safeguarding recurring revenue by ensuring the ability to sell to existing customers.

**Michigan State University**                                                                                    **East Lansing, MI, USA**
*Research Assistant*                                                                                          *September 2022 - January 2023*
- Collaborated with Dr Xiaoming Liu, helping in the BRC data set labeling process using the Ultimate Labelling program from GitLab to increase the efficiency of real-time detection.

## PROJECTS & OUTSIDE EXPERIENCE

**Targetist**                                                                                                       **East Lansing, MI, USA**
*Founder & COO*                                                                                                        *March 2023 - Present*
- Collaborated in a team of 6 to build an AI-based task automation software, employing rerouting principles for automated task scheduling. Contributed through pair programming and conducted thorough code reviews to ensure code efficiency and performance optimization.
- Developed the backend algorithm and RestAPI using Python that seamlessly integrates with the Mongo database and Node.
- Collaborated with the team to develop the machine learning model to efficiently score and schedule tasks in Python, and set up the Mongo DB trigger using Amazon EventBridge to connect to an AWS lambda function containing the model code, whose CI/CD is set up with GitHub Actions workflow and basic shell script.
- Hosted our API written in Node JS on AWS EC2 Servers, and automated CI/CD workflows with GitHub Actions through shell scripts to automate pulling in changes committed to Version Control on the clones of the API repository present in the EC2 Server for hosting.

**SignLang**                                                                                                           *June 2024 - Present*
*Developer*
- Developed a real-time sign language interpreter using Python, OpenCV, and MediaPipe, achieving accurate hand gesture detection and recognition with machine learning models.

- Implemented a robust text-to-speech system using gTTS and Pygame, providing dynamic audio feedback and real-time subtitles for recognized gestures, enhancing accessibility for non-verbal communication.
- Engineered a sequential gesture detection mechanism to interpret complete sentences, integrating gesture-to-word mapping and sentence construction, resulting in a seamless and interactive user experience.

**Outlay**                                                                    **East Lansing, MI, USA**
                                                                              *March 2024 - Present*
- Developed an iOS application leveraging Swift and MongoDB to assist users in managing their finances, enabling effective expense limitation and comprehensive transaction tracking.

**Zenith**                                                                    **Remote**
*Backend Engineer*                                                            *September 2023 - Present*
- Led a 3-member team during CalHacks in developing an AI-based software crash detection system. Employed C++ to build the algorithm, MongoDB for database management, and Electron JS alongside React for frontend development.
- Integrated a clusterification method using the MinHashing similarity algorithm to enhance crash categorization accuracy. Implemented CI/CD practices to ensure rapid iteration and deployment cycles, optimizing software development efficiency.

**ShareIt**                                                                   **East Lansing, MI, USA**
                                                                              *January 2024 - Present*
- Developed a P2P network architecture in C# to facilitate efficient file sharing among users, implementing, data transfer mechanisms, and collaborating on key features like file indexing and search functionality, ensuring reliability and performance through rigorous testing and debugging.

**WiseAI**                                                                    **East Lansing, MI, USA**
                                                                              *December 2022 - January 2023*
- Developed WiseAI, a Python project that utilizes OpenAI's GPT-3 language model to predict stock prices with high accuracy
- Integrated Yahoo Finance API and OpenAI API (DaVinci Engine 02) to gather and analyze large volumes of financial data for real-time stock price prediction.

## LEADERSHIP & ACTIVITIES

**International Student Association (ISA),** Co-Director of PR & Graphic Design
- Designed and created the official website; created graphics for Instagram and posters; wrote newsletters for over 120 international students.

**Blogger/ Writer**
- Published my book 'War Tales – Short stories on Second World War' globally; also writes literary blogs.

## ACHIEVEMENTS

Michigan State University, International Tuition Scholarship and Presidential Scholarship
Michigan State University, Rollin Gerstacker Endowment
Michigan State University, Adam Enfroy Scholarship