Sarang Bhide

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Education

University of Michigan — Expected May 2027
Bachelor of Science in Computer Science (GPA: 3.72 / 4.00) — *Ann Arbor, Michigan*
- **Relevant Coursework:** Data Structures and Algorithms (C++), Machine Learning (Python), Web Systems (Python, HTML/CSS/JS), Computer Organization (C), Computer Networks (C++)
- **Activities:** MedLaunch, University Campus Orchestras, IM Basketball, IM Volleyball

Experience

University of Michigan — Aug 2025 – Present
Instructional Aide for SI 357/664 - Building Data-Driven Applications — *Ann Arbor, Michigan*
- Fostered a collaborative learning environment by leading weekly discussion sections for over 50 students, translating complex topics like Django and SQL into practical skills for hands-on web application development
- Collaborated with a team of instructional staff to evaluate over 100 student projects per semester, providing feedback on coding practices and contributing to a centralized autograding pipeline
- Facilitated troubleshooting sessions for 100 students, creating live demos that reduced common debugging and deployment issues by an estimated 25% and saved class time

GreenLancer — May 2025 – Aug 2025
Software Engineer Intern — *Detroit, Michigan*
- Collaborated with the product and QA teams to integrate a backend Activity Feed system that improved debugging efficiency and reduced investigation time for user-reported errors by 20%
- Implemented robust SQL Server data models and query logic for comprehensive event tracking, supporting a system that logs over 10,000 unique user actions monthly and contributes to a reliable analytics pipeline
- Contributed to a smooth deployment process by leading walkthroughs with QA and external users, leveraging GitHub Actions for CI/CD, which reduced post-deployment bug reports by 25%

Projects

Karaoke | *TypeScript, Next.js, Demucs, Vercel, Machine Learning, Audio Processing*
- Developed an audio processing tool using Next.js and TypeScript to isolate vocal audio from recordings, significantly enhancing the practice capabilities of musicians with instrumental accompaniment
- Leveraged Demucs, an open-source music source separation library, to precisely separate audio tracks into distinct vocal and instrumental components, demonstrating high-fidelity audio processing
- Engineered a robust preprocessing pipeline for various audio formats (MP3, WAV) and postprocessing techniques, ensuring optimal playback and real-world deployment of audio-based AI tools

Instagram Clone | *Python, JavaScript, Flask, HTML/CSS, SQL, React.js, AWS, REST API*
- Developed a full-stack web application to replicate Instagram's core features, focusing on implementing a scalable architecture to handle user authentication, photo uploads, and user interactions
- Designed and implemented a robust Flask RESTful API to handle thousands of requests per hour with a fast response time, facilitating efficient data exchange between the frontend and backend
- Analyzed and optimized database schema and queries, reducing database load by 15% and improving overall system performance and scalability

Search Engine | *Python, Flask, SQL, Hadoop, REST API*
- Engineered a scalable search engine architecture capable of processing and indexing extensive web page collections using a Hadoop-based MapReduce pipeline and a segmented inverted index to improve query efficiency
- Developed performant Index servers that use a REST API to query vast datasets, integrating advanced text analysis and PageRank algorithms to deliver high-quality search results
- Engineered a dynamic user interface that fetches and merges parallel responses from distributed backend servers using multithreading, ensuring rapid and accurate display of search results

Technical Skills

Languages: C, C++, Python, C#, HTML, CSS, JavaScript, Java, TypeScript, SQL, R, Shell
Technologies: React.js, Django, Flask, .NET, Docker, Hadoop, Git, REST API, AWS, Bootstrap, Next.js, macOS, Linux