

Sarang Bhide

U.S. Citizen | 248-989-9030 | ssbhide@umich.edu | linkedin.com/in/sarangbhide | github.com/ssbhide | ssbhide.github.io

EDUCATION

University of Michigan

Ann Arbor, MI

Bachelor of Science in Computer Science, GPA: 3.62

Aug 2023 – May 2027

- **Relevant Coursework:** Data Structures & Algorithms, Machine Learning, Operating Systems, Databases, Web Systems, Computer Networks, Theory of Computation, Computer Organization, Distributed Systems
- **Activities:** MedLaunch, University Campus Orchestra, IM Volleyball and Basketball

TECHNICAL SUMMARY

Languages: C++, Python, TypeScript, SQL, C#, C, Shell

Frameworks & Tools: AWS, Docker, React, Next.js, Flask, GitHub Actions, PostgreSQL

EXPERIENCE

Instructional Aide — SI 357/664

Aug 2025 – Present

University of Michigan

Ann Arbor, MI

- Led weekly discussion labs for 50+ students and designed hands-on exercises that improved assignment pass rates, reduced common debugging questions by 25%, and enhanced conceptual understanding of backend development
- Built and maintained autograding scripts and a shared CI testing pipeline to evaluate 100+ student projects per semester, improving grading throughput and ensuring consistent, reliable evaluation across multiple environments
- Prepared deployment and debugging demos that increased lab completion rate by 50%, showcasing practical workflows for deploying backend services and resolving real-world configuration issues
- Standardized assignment templates, rubrics, and onboarding documentation for students and incoming instructional staff, accelerating TA ramp-up, improving grading consistency, and reducing setup ambiguity across lab sections

Software Engineer Intern

May 2025 – Aug 2025

GreenLancer

Detroit, MI

- Designed and shipped a full-stack Activity Feed service (API, worker, UI) that logs 10k+ user events/month, improving observability across core workflows and reducing mean time-to-investigate user issues by 20%
- Authored SQL Server data models and optimized reporting queries, cutting report generation time by 40% while improving data consistency, uptime, and accessibility for internal product analytics dashboards
- Introduced GitHub Actions workflows and staged rollouts for services, enabling consistent automated testing, safer deployments, and a 25% reduction in post-deployment bug reports across engineering teams
- Instrumented production services with structured logging, metrics, and automated health checks to enhance observability, accelerate incident response, and reduce average triage time for system issues by over 30%

PROJECTS

Distributed MapReduce Framework — Python, Hadoop, Sockets

Mar 2025

- Built a distributed MapReduce-style computing framework using TCP/JSON RPC and UDP heartbeats to coordinate nodes, detect worker failures, and automatically reassign tasks for fault-tolerant data processing
- Streamed mapper and reducer I/O to maintain constant memory usage while handling multi-gigabyte datasets, achieving faster aggregation through optimized merge and shuffle phases for improved throughput

Search Engine — Python, Flask, Hadoop, SQL

Apr 2025

- Developed a scalable search engine with segmented inverted indices and PageRank-based ranking algorithms, enabling efficient indexing and retrieval across distributed storage nodes for large document collections
- Implemented RESTful index servers and a multithreaded query aggregator to merge parallel search results in real time, reducing latency under heavy query loads and ensuring accurate ranked outputs

Karaoke Machine — TypeScript, Next.js, ML, Audio

Jan 2025

- Created a web-based audio separation pipeline to extract high-fidelity vocal and instrumental stems using deep learning models, allowing musicians to isolate parts for practice directly in the browser
- Optimized inference and preprocessing pipelines to achieve >95% source-to-distortion ratio (SDR) on benchmark audio tracks while cutting runtime to under 30 seconds for 3–5 minute songs