

HRISHIKESH SHINDE

Madison, WI 53703 | (608) 690-1162 | hshinde@wisc.edu
linkedin.com/in/hrishikeshh-shinde | github.com/hrishikeshh-shinde

Education

University of Wisconsin, Madison

May 2026

Master of Science in Computer Science **GPA: 3.81/4**

Madison, WI

Coursework: Distributed Systems, Advanced Operating Systems, Advanced Database Systems, High Performance Computing, Big Data Systems, Computer Networks, Machine Learning, Artificial Intelligence

Pune Institute of Computer Technology

Jun. 2022

Bachelor of Engineering in Electronics and Telecommunications **CGPA: 3.83/4**

Pune, India

Coursework: Data Structures and Algorithms, Object Oriented Programming

Technical Skills

Languages: C, C++, Python, Java, Go, Rust

Systems & Backend: Linux, Multithreading, OpenMP, CUDA, gRPC, Kafka

Databases: SQL, NoSQL, Cassandra

Cloud & Tools: AWS, Docker, Git

Experience

Software Development Engineer

Jul. 2022 – Jul. 2024

Mastercard

Pune, India

- Developed scalable backend services in a distributed transaction processing system building APIs for transaction switch, ETL, scheduler and ISO converter services used by internal teams and partner systems.
- Identified, debugged, and fixed backend data consistency and performance issues by analyzing database queries, transaction paths, and concurrent request flows across production services.
- Implemented server monitoring and structured logging to track service health, request failures, and latency issues, enabling faster identification of production bottlenecks.
- Ensured 95%+ uptime for dev and staging environments supporting 50+ partner banks by resolving infrastructure issues, certificate expirations, and deployment failures.
- Reduced production issue resolution time by performing root cause analysis through request tracing and log based debugging during on-call support.
- Improved system correctness by creating and maintaining automated test suites, increasing test coverage from 65% to 90% and significantly reducing manual testing effort.

Projects

F2FS Data Temperature Prediction | *Linux FS internals*

Nov 2025 - Dec 2025

- Improved data placement in Linux F2FS by predicting page lifetimes using a weighted moving average of overwrite behavior, enabling lifetime aware data placement in the write path.
- Applied to SQLite database workloads, reducing mixed lifetime segments by up to 11x, which lowered SSD garbage-collection overhead and improved sustained write efficiency.

External Sort Engine | *C++, Database Internals*

Oct 2024 - Dec 2024

- Built an external merge sort engine to handle datasets larger than memory by creating cache-sized runs and spilling data from RAM to disk during execution.
- Improved merge performance by using a Tree-of-Losers structure, reducing comparison overhead with offset-value coding, and tuning page sizes and disk I/O, with correctness verified through an automated test suite.

Custom Filesystem with RAID Support | *C, FUSE*

Nov 2024 - Dec 2024

- Built a user-level block-based filesystem using FUSE with support for core POSIX operations like read, write, mkdir, unlink, and metadata persistence.
- Implemented RAID 0 and RAID 1, and designed RAID 1v for consistent mirrored reads with majority voting logic; used mmap to optimize disk I/O and memory efficiency.

Concurrent HashMap | *C++, OpenMP*

Mar 2025 - May 2025

- Built a concurrent hashmap in C++ supporting parallel inserts, lookups, and deletes on workloads of up to 1M keys using fine-grained locking and sharding.
- Implemented dynamic resizing with parallel rehashing using OpenMP, achieving up to 90% CPU utilization and significantly reducing resize latency under multi-threaded workloads.