# Shreyas Kanjalkar

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## Education

**Georgia Institute of Technology** Atlanta, GA
*Master of Science, Computer Science; GPA: 4.00/4.00* *August 23 - May 25(Exp)*

- **Specialization**: Computing Systems
- **Graduate TA**: Database Systems TA under Prof. Kexin Rong
- **Courses**: Cloud Computing, Database, Cryptography, Blockchain, OS, Security, Algorithms, ML, Parallel Computing

**Worcester Polytechnic Institute** Worcester, MA
*Master of Science, Robotics; GPA: 4.00/4.00* *August 21 - May 23*

- **Graduate RA**: PeAR Lab - CV, Swarm Robotics

**Manipal Institute of Technology** Manipal, India
*Bachelor of Technology, Mechanical Engineer; GPA: 8.26/10.00* *August 16 - May 20*

## Industry Experience

**AWS Redshift, Amazon** Seattle, WA
*Software Development Intern* *May 24 - August 24*

- Developed a robust load testing framework in **Java** for a critical microservice in Redshift, significantly boosting performance assurance under high-traffic conditions for AWS services
- Executed and analyzed stress and peak load tests, optimizing instance configurations and achieving **over $600,000** annually in cost savings
- Integrated profiler in critical micro-service, identifying **3 critical performance bottlenecks**, leading to a **30%** performance boost; streamlined load testing into the **CI/CD pipeline** as an approval workflow

**RoboMatter Inc** Remote, TX
*Software Firmware Intern* *Jan 24 - May 24*

- Prototyped object color detection algorithms in **Python 3** for rapid iteration and testing. Adapted and implemented the algorithm in **embedded C** to run on a memory-constrained device - ESP32S3
- Designed and simulated a friction-inclusive, power-loss model of a 3-wheel AIM robot using **MATLAB**

## Academic Projects

**High-Performance Distributed Systems** *Spring 24*

- Developed a **Distributed Key-Value Store** using custom file storage and two-phase commit for reliable data transactions
- Crafted a robust, recoverable virtual memory system, ensuring data integrity with undo-redo logs
- Designed a **Credit-based Scheduler** that enhanced multi-threading by 20% and streamlined the management of application threads in **C** using load balancing and preemption

**Advanced Implementation and Exploration of Database Internals** *Fall 23*

- Developed a **C++** database with multi-threading supporting safety of advanced queries and transactions.
- Optimized disk storage and data retrieval with B+ trees and developed a BufferManager for enhanced caching
- Developed a Resume Matcher application in **Python** and **JavaScript**, incorporating EvaDB, an AI-powered database, to enhance SQL development with AI model integration

**Failure Detection in Distributed Systems - SWIM Protocol Implementation** *Summer 23*

- Implemented SWIM in **C++** protocol for scalable membership management in distributed systems using gossip-based communication and periodic updates
- Utilized combination of direct and indirect pings for efficient failure detection, ensuring reliable and up-to date view of active members while handling network delays and false positives github

## Technical Skills

**Languages**: C++, C, Python, Java, GO, Kotlin, SQL, JavaScript, nodejs, Flask, React, MATLAB