SHIVAM SAXENA

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EDUCATION

Georgia Institute of Technology Atlanta, Georgia
*Master of Science in Computer Science — **GPA 4.0/4.0*** *May 2026*
Relevant courses: Distributed Computing, Advanced OS, Advanced DB, Computer Networks, GPU HW&SW

Indian Institute of Technology Kharagpur Kharagpur, India
*Bachelor of Technology in Electronics, Minor in Computer Science — **GPA 9.12/10*** *May 2021*
Relevant courses: Algorithms, Computer Architecture, Operating Systems, Machine Learning, Object Oriented Systems

PROFESSIONAL EXPERIENCE

Microsoft Corporation Bengaluru, India
Software Engineer II - Azure Managed Disks *Jan 2023 – Jul 2024*

- Contributed to fault tolerance and scalability efforts for high performance storage volumes leveraged by Azure virtual machines, maintaining **99.999%** availability and **50K** disks per subscription per geographical region.
- Worked on incremental snapshots and migration capabilities in **C++** to move live data across servers at **100+ MB/s**.
- Developed nuanced priority scheduling algorithms for jobs to progress by dynamically adjusting for error accumulation.
- Designed and developed a library to update storage nodes' health and load factor globally using exponential moving averages, and utilizing it to generate new copy assignments for disk slices by weighted random distribution strategy.

Software Engineer I - Azure Blob Management *Jun 2021 – Dec 2022*

- Worked on Blob Inventory feature, built using a producer-consumer architecture to efficiently scan billions of blobs(Binary Large Object) each day for **10K+** users and collate metadata based on various filtering conditions.
- Implemented Storage Actions service to perform batch operations on subsets of blobs based on multiple inclusion and exclusion criteria, reducing customer expenses by upto **50%** by automating tasks like deletion, down-tiering etc.
- Designed a new bottom-up approach for fast recursive deletion in hierarchical namespace accounts with **1B+** blobs.
- Remodeled REST API calls by leveraging C++ and **Postman**, adding support for pagination and improving resiliency.

INTERNSHIPS

Nokia Corporation Sunnyvale, California
Autonomous Network Fabric Intern *Jun 2025 – Aug 2025*

- Designed and deployed a cloud-native **agentic AI system** built with **KAgent** to automate CI/CD workflows.
- Built **LLM-driven** autonomous pipelines orchestrated via **Kubernetes**, cutting release cycles from **hours to minutes**.
- Implemented **MCP servers** in Python to integrate agents with **GCP**, **ArgoCD**, **JIRA** for complex deployments.

Edelweiss Securities Limited Mumbai, India(Remote)
Systematic Trading Intern *May 2020 – Jun 2020*

- Identified strong market trends based on indicators like RSI, ADX etc. to dynamically modify long and short positions.
- Implemented **ARIMA** model for forecasting, achieved increased annual returns of upto **8%** & Sharpe ratios of **0.45-0.5**.

PROJECTS

Hiding cold-start latencies for FaaS clusters on the Edge Georgia Tech
Embedded Pervasive Lab, Prof. Umakishore Ramachandran *Jan 2025 – Dec 2025*

- Worked on building containerized apps with FaaS platforms like **Knative** & deployed them across peer Edge sites.
- Integrated these services with novel Federated Edge Orchestrator and tested them under various request load patterns.
- Analyzed the effect of **horizontal pod autoscaling** coupled with different offloading policies, concurrency limits etc.

Sharded Key-Value Storage Service Georgia Tech
CS 7210 Distributed Computing *Mar 2025 – Apr 2025*

- Developed a linearizable key-value store inspired by Google Spanner that partitions keys over sets of replicated shards.
- Implemented **PAXOS** to ensure data consistency in a shard group and **two-phase commit** for cross-shard transactions.

Runtime Security Enforcement with Behavior Control IIT Kharagpur
*Undergraduate Thesis — Partnership with **Altos Data*** *Jan 2021 – Apr 2021*

- Developed a **Linux kernel module** to achieve runtime security in major application models by controlling execution behavior of relevant process/thread. Sent various kinds of controls to the kernel module in a lightweight JSON schema.
- Defended against remote code execution(RCE) by monitoring syscalls through input/output control interfaces(**ioctl**) and kernel probe tracers(**kprobes**), then failing these calls based on specified controls by modifying the function args.
- Successfully protected against unauthorized data access by developing a state machine to monitor successive syscalls.

TECHNICAL SKILLS

- **Languages:** C, C++, Java, Python, Bash, Powershell, Go, CUDA, SQL, P4, C#, JavaScript, R,MATLAB, PHP, Kotlin
- **Tools/Platforms:** Git, GitLab, Docker, Kubernetes, Helm, Terraform, Azure, AWS, gdb, eBPF, Wireshark, Splunk
- **Libraries/Technologies:** Spring, gRPC, OpenMP, MPI, NumPy, Pandas, Redis, Postgres, MongoDB, GraphQL, libvirt