SHIVAM SAXENA

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EDUCATION

Georgia Institute of Technology   Atlanta, Georgia
Master of Science in Computer Science, Computing Systems Specialization   *Expected Dec 2025*

Indian Institute of Technology Kharagpur   Kharagpur, India
Bachelor of Technology in Electronics and Electrical Communication Engg.   *May 2021*
(with Minor in Computer Science and Engineering)   **GPA 9.12/10**
Coursework: Computer Networks, Network Security, Algorithms, Computer Architecture, Operating Systems

EXPERIENCE

Microsoft Corporation   Bengaluru, India
*Software Engineer - Azure Managed Disks (**promoted to SWE II** in Mar 2024)*   *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.
- Worked on incremental snapshots and migration capabilities to move live data across servers at **50+ MB/s**.
- Designed a library to update storage nodes' health and load factors using exponential moving averages.
- Employed weighted random distributions to generate and parallelize new copy assignments efficiently.

Microsoft Corporation   Bengaluru, India
Software Engineer - Azure Blob Management   *Jun 2021 - Dec 2022*

- Worked on Blob Inventory feature, using a producer-consumer architecture to aggregate filesystem metadata.
- Implemented Storage Actions service to perform batch operations, reducing customer expenses by upto **50%**.
- Designed a new bottom-up approach for quick deletion in hierarchical namespace accounts with **1B+** files.
- Remodeled API calls by leveraging **C++ and Postman**, adding resiliency and facilitating optimized recursion.

Nucleodyne Systems   SF Bay Area, California(Remote)
Software Engineering Intern   *Jul 2020 - Aug 2020*

- Worked with various authentication mechanisms in Spring Framework for Java including **JDBC**, **LDAP**, **JWTs** etc. Devised role-based access control(RBAC) frameworks for REST apps using **OAuth 2.0**.
- Built an authorization engine with **Java Controllers** to secure web apps exposed to **BOLA** API vulnerability.

PROJECTS

Runtime Enforcement with Behavior Control   IIT Kharagpur
Undergraduate Thesis   *Jan 2021 - Apr 2021*

- Developed a **Linux kernel module** to achieve runtime security by monitoring and capturing syscalls.
- Controlled execution behavior via input/output control interfaces(**ioctl**) and kernel probe tracers(**kprobes**).
- Developed an in-memory state machine to monitor successive syscalls and improve decision-making.

Face detection on low powered devices   IISc Bengaluru
Summer Research Fellowship Intern   *May 2019 - Jul 2019*

- Implemented Viola-Jones algorithm for real-time face detection using Haar features in **OpenCV+MATLAB**.
- Employed a variant of **AdaBoost** learning algorithm, cascading classifiers to achieve accuracy up to **85%**.

IEEE Workshop on Image Processing   IIT Kharagpur
Technology Robotix Society   *Dec 2017*

- Learned image processing algorithms such as blob and edge detection, noise filters, histograms in **OpenCV**.
- Applied them to solve problems involving template matching, object tracking, and path finding via **A*, RRT**.

SKILLS

- **Languages:** C, C++, Java, Python, Bash, Powershell, MATLAB/Octave, R, C#, Latex, SQL, PHP, JSP
- **Tools/Libraries:** Docker, Kubernetes, Spring, WinDbg, Postman, MongoDB, Pandas, OpenCV, Flask, Boost

ACHIEVEMENTS

- Awarded **Best Outgoing Technology Man** 2020-21 among **150** boarders by RK Hall, IIT Kharagpur.
- Attained **206 Rank** and honorable mention at **ACM ICPC, Amritapuri Regionals 2018** across 1000+ teams.