

# Sarthak Raut

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## EDUCATION

### Virginia Tech

Master of Engineering in Computer Science and Applications

Aug 2024 - May 2026

Virginia, USA

### Mumbai University

Bachelor of Technology In Computer Engineering

Aug 2019 - May 2023

Maharashtra, India

## PROFESSIONAL EXPERIENCE

### Software Development Engineer

Version Next Technology Pvt. Ltd.

January 2023 – May 2024

Mumbai, Maharashtra, India

- Engineered and maintained core system modules, increasing system throughput.
- Developed and integrated automated test suites that reduced regression errors by 20%, ensuring robust system stability.
- Partnered with engineers, architects, and managers to define and implement a comprehensive security strategy, reducing security incidents.
- Streamlined security monitoring through the integration of advanced logging tools, reducing incident response times and enhancing threat detection. Conducted testing of encryption modules and protocols, ensuring robust performance and compliance with industry standards
- Refactored legacy code and optimized processes, cutting processing time and simplifying maintenance.
- Developed serverless workflows with AWS Lambda, streamlining automated deployment pipelines. Optimized containerized deployments using Docker & Kubernetes, reducing infrastructure costs by 20%.

### DevOps Intern

NTR Trust

November 2022 – January 2023

Chennai, Telangana, India

- Built and maintained React-based dashboards for real-time data visualization, improving analytics accessibility for stakeholders.
- Designed and integrated CI/CD pipelines that reduced deployment errors and increased release frequency, fostering efficient development cycles.
- Implemented AWS Lambda-based notifications and integrated an event-driven architecture using Kafka, resulting in improved user engagement and system responsiveness.
- Configured AWS CloudWatch and related monitoring tools to track system performance for prompt issue resolution and reducing downtime.
- Collaborated with cross-functional teams to deliver a responsive mobile application with an improved user interface, leading to 5% increase in user satisfaction ratings.

### SDE Intern

Mirae Asset Foundation

May 2022 – August 2022

Mumbai, Maharashtra, India

- Assisted in a systematic review of the system architecture, identifying vulnerabilities that contributed to a 10% overall improvement in security.
- Investigated and resolved 12 security breaches and incidents, recommending corrective actions that decreased future incidents and fortified system security. Designed data encryption pipelines using AES-256 & RSA, securing financial transactions.
- Developed and reorganized advanced security solutions—including 3 firewalls, encryption protocols, authentication mechanisms, access control systems, and surveillance tools—ensuring alignment with the bank's standards.

## PROJECTS

### AX Logistics | Java, Kotlin, Firebase, SQL

- Engineered parcel allocation mechanisms, cutting driver idle time by 60 minutes per shift and sustaining on-time fulfillment rates above 95%.
- Implemented load balancing using AWS services and overload prevention for APIs, increasing reliability by 30% and eliminating downtime.
- Integrated payment gateway and QR code scanner, driving a 20% rise in online transactions and a 15% expansion in contactless deliveries.

### Nutriful | Dart, Flutter, Firebase, Jira, GitHub

- Conducted over 50 unit, integration, and performance tests, ensuring 99% application quality and functionality.
- Configured 2FA and MFA systems, enhancing user authentication security by 40%.
- Optimized app performance, improving load times by 35% and scaling to support 10,000+ concurrent users.

### m.Finance | C++, Dart, Flutter, Firebase

- Researched and created security best practices, increasing data protection measures by 50%.
- Enabled deep linking and in-page analytics, boosting user engagement by 25% and multi-factor data collection by 30%.
- Designed certificate transparency library, preventing man-in-the-middle attacks and ensuring 100% SSL certificate verification.
- Documented and maintained backend architecture, reducing system errors by 20% and streamlining development processes.

## TECHNICAL SKILLS

**Networking:** TCP/IP Stack, OSI Model, DNS, DHCP, VPN, Firewalls, SSL/TLS, ICMP, HTTP/HTTPS, Packet Analysis

**Languages:** Kotlin, Java, Swift, C, C++, Dart, LUA, Rust, SQL, Javascript, Typescript, Python, Go, Ruby

**Systems & Cloud:** AWS, Azure, Distributed Systems, Multi-threading, OS Internals, Docker, Kubernetes, Jenkins, CI/CD, Ansible

**Developer Tools & IoT:** Wireshark, Postman, Neovim, VS Code, Android Studio, Microcontroller Programming, RTOS, Arduino, Raspberry Pi

**Technologies/Frameworks:** GitHub, Git-Lab, Flutter, Jira, Firebase, Bitbucket, Automated Testing, Unit Testing, GDB, Simulation Tools

## ACHIVEMENTS

- Led a hackathon project that developed a real-time monitoring solution using AWS and React, earning top recognition for innovative design.
- 1st Place, CodeSecure Hackathon 2023: Led a 4-member team to develop a Flutter-based network monitoring tool with real-time TCP/IP packet analysis, winning "Best Security Solution" among 50+ teams.
- Finalist, University Cyber CTF 2022: Ranked in the top 10% by exploiting OSI Layer 3-7 vulnerabilities and reverse-engineering encrypted payloads.