

Shammy Kumar

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EDUCATION

Stony Brook University

Master of Science, Computer Engineering | **GPA: 3.78/4.0**

Stony Brook, NY

Aug 2025 – Jun 2027

Guru Gobind Singh Indraprastha University

Bachelor of Technology, Electrical and Electronics Engineering | **GPA: 7.85/10.0**

Delhi, India

Aug 2016 – Sep 2020

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, TypeScript, Go, C++, SQL

Frameworks: Spring Boot, React, Angular 12, Node.js, Express, JUnit, Mockito, GraphQL, gRPC

Cloud & DevOps: AWS, GCP, Azure, Docker, Kubernetes, CI/CD, Terraform, Git, GitHub Actions, SonarQube

Databases & Messaging: PostgreSQL, MongoDB, MySQL, Redis, RabbitMQ, Kafka

AI/ML: PyTorch, TensorFlow, HuggingFace, SciBERT, NER, NumPy, Pandas

Systems & Fundamentals: Distributed Systems, TCP/IP, Network Programming, Data Structures & Algorithms, System Design, Microservices, OAuth2/OIDC, OOP, SDLC, Linux, Windows

EXPERIENCE

Graduate Research Assistant

Feb 2026 – Present

Stony Brook Medicine – Stony Brook University

Stony Brook, NY

- Building production-grade web application with **Next.js** leveraging server-side rendering and optimized routing for clinical research workflows.
- Orchestrating continuous deployment pipeline on **Vercel** with automated CI/CD, configuring multi-environment workflows for zero-downtime releases.
- Debugging and resolving post-deployment issues including build failures, runtime errors, and performance bottlenecks, improving application reliability through iterative refactoring and monitoring.

Software Engineer

Oct 2022 – Jul 2025

Bank of America

Gurugram, India

- Architected and delivered the **Tax Payments System** and **Cheque/Receivables Processing System** for the APAC region, enabling seamless financial operations for millions of users.
- Led migration of mission-critical legacy UI from **AngularJS** to **Angular 12**, reducing technical debt by **30%** and improving frontend performance by **25%**.
- Implemented enterprise-grade **Role-Based Access Control (RBAC)**, resolving **85%** of security vulnerabilities and achieving **100% audit compliance**.
- Optimized high-reliability financial modules using **Spring Boot**, achieving **90%+ unit test coverage** and reducing production defects by **15%**.
- Collaborated across cross-functional teams to deliver **90+ user stories** in an Agile environment, accelerating product velocity and ensuring on-time delivery.

Software Engineer

Jan 2021 – Sep 2022

Infosys

Delhi, India

- Led transition of legacy monolithic application to **Microservices architecture**, reducing page load times by **40%** and doubling system scalability.
- Boosted **SQL database** efficiency by **60%** through strategic data segmentation and index tuning, significantly reducing query latency.
- Directed full-lifecycle QA and bug resolution for enterprise UI/Backend modules, resolving **80+ critical defects** and delivering end-to-end **React-based** interfaces for a major FMCG client.

PROJECTS

Fault-Tolerant HTTP Load Balancer | Go, Network Programming

Dec 2025

- Built a high-availability load balancer with health monitoring and **self-healing failover** for 10k+ concurrent requests.
- Applied round-robin scheduling algorithms & mutex-based concurrency control to manage traffic across active backends.

AI Citation Parser using Transformers | Python, SciBERT, NLP

Nov 2025

- Engineered a SciBERT-based NER model leveraging the **GIANT dataset from Harvard Dataverse** (1B+ synthetic citations), achieving a **95% F1-score**.
- Built scalable pipeline processing 512GB XML with **BIO tagging**, fine-tuning transformer models to reduce manual metadata extraction time by **90%**.

Automated Financial Workflow Engine | Java, Spring Boot, TIFF Processing

Apr 2023

- Engineered and deployed a specialized engine to streamline the processing of legacy TIFF-formatted cheques, clearing a **\$7M+ backlog**.
- Integrated engine with clearinghouse APIs for real-time tracking, reducing manual processing intervention by **70%**.

RESEARCH PUBLICATIONS

Machine Learning Approaches for Entity Extraction from Citation Strings

Nov 2023

- Published in Decision Intelligence, Lecture Notes in Electrical Engineering, **Springer**.