KUSHAL KOTHARI

New York, USA | kk5268@nyu.edu |+1 (917) 984-1096 | kushal-kothari.github.io | LinkedIn

EDUCATION

New York University, MS in Computer Science (Leadership: Graduate Ambassador)   September 2023 – May 2025 | New York, USA

University of Mumbai, BE in Computer Engineering   August 2018 – May 2022 | Mumbai, India

SKILLS

Programming & Frameworks: Python, Java, C++, Spring Boot, Django, Flask

Core CS Fundamentals: Data Structures & Algorithms, Object-Oriented Programming (OOP), Low-Level Design, Multithreading, Distributed Systems, System Design

Cloud & DevOps: AWS, GCP, Azure, Docker, Kubernetes, Jenkins, GitHub Actions, CI/CD, Linux

Databases: PostgreSQL, MySQL, MongoDB (SQL & NoSQL), Redis, Cassandra

Microservices & APIs: REST APIs, Event-Driven Systems, gRPC, Microservices Architecture, Message Queues (Kafka, RabbitMQ)

Testing & Code Quality: Unit Testing, Integration Testing, Test-Driven Development (TDD), JUnit, PyTest, Mockito

Collaboration & Tools: Git, Jira, Agile/Scrum, Postman, Secure Coding Practices, Load Testing (Apache JMeter)

PROFESSIONAL EXPERIENCE

Software Engineer, New York University Wasserman Center   December 2023 – May 2025 | New York

- Built a Flask-based ticketing platform, cutting IT request turnaround by 50% and improving service delivery across departments.
- Developed secure remote access workflows with VPN integration, eliminating on-site dependencies and enabling hybrid staff to safely access internal tools.
- Diagnosed and fixed LAN failures in Atrium kiosks during career fairs via TCP/IP troubleshooting and Wireshark analysis, reducing student check-in delays by 30% and ensuring uninterrupted event operations.

Software Engineer Intern, SalesCaptain   May 2024 – December 2024 | New York

- Designed AI-driven engagement systems (messaging, chat, payment integrations) that boosted customer conversion rates by 22% through faster, reliable automation.
- Optimized backend infrastructure by configuring AWS load balancers/security groups, lowering latency by 30% and enabling real-time follow-ups and reminders.
- Enhanced AI-powered communication tools (voice/text), cutting response times by 40% and increasing client retention by 18%.

Software Engineer, Media.Net   September 2022 – August 2023 | Mumbai

- Led migration of 1,500+ AdTech sites to auto-scalable AWS infrastructure (VPC, subnets, EC2), reducing launch errors by 20%, saving $32K, and accelerating onboarding.
- Resolved production outages 30% faster by leading root-cause analysis on Linux servers and creating proactive monitoring systems, improving uptime reliability.
- Improved AWS infrastructure (EC2, S3, Lambda) for 25% faster runtime performance and lower operational costs, while boosting active user engagement by 15% via analytics-driven product enhancements.

Software Developer Intern, Google Summer of Code [Link]   April 2021 – August 2021 | California

- Built a production-grade Yggdrasil client library in Erlang, enabling secure IPv6 mesh networking across 40+ distributed test environments, reducing runtime setup effort by 70%.
- Improved BarrelDB's peer-to-peer replication layer, achieving 30% higher data consistency under high node churn scenarios.
- Published research in collaboration with IIT Kanpur (IEEE ICICT 2022), benchmarking decentralized routing and security protocols for next-gen networking.

RESEARCH & PUBLICATIONS

- **Tor vs Yggdrasil: A Comparative Study of Two Communication Systems**, *IEEE ICICT 2022* — Co-authored a 30-day benchmarking study comparing Tor's onion routing vs. Yggdrasil's IPv6 mesh topology; evaluated encryption strength, RTT, packet loss, and throughput across 40+ distributed nodes. DOI
- **Fine-Grained Clothing Attribute Detection using Mask R-CNN**, *IJRASET, Apr 2022* — Developed a Detectron2-based segmentation pipeline for apparel attribute tagging; deployed via Streamlit to enable real-time inference demos. DOI

PROJECTS

Advanced Malware Detection System – Large-Scale Classification (XGBoost, ML, Data Optimization) [Link]

- Built and deployed an XGBoost model that classified 21,736 malware samples across 9 families, reducing detection errors by 85% and cutting analysis time by 60%, strengthening security for 150M+ global users.
- Optimized data pipelines for 200GB+ raw .byte files through refactoring and hyperparameter tuning, reducing feature extraction time by 35% and improving real-time detection efficiency.

CERTIFICATIONS

- AWS Certified Solutions Architect – Associate (SAA-C03) | Amazon Web Services (AWS) | March 2025
- AWS Certified Cloud Practitioner | Amazon Web Services (AWS) | January 2025