KUSHAL KRISHNAPPA

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kushalkrishnappa.com | linkedin.com/kushalkrishnappa | github.com/kushalkrishnappa | **Availability:** Spring/Summer 2026

EDUCATION

Northeastern University, Boston — Jan 2025 - Present
Master of Science in Computer Science — CGPA: 4.0/4.0
Coursework: CS5010 - Programming Design Paradigm, CS5800 - Algorithms

PES University, Bengaluru — Aug 2018 - June 2022
B.Tech in Computer Science and Engineering
Coursework: Machine Learning, Network & Information Security, Big Data, Operating Systems

PROFESSIONAL EXPERIENCE

Pure Storage - Production Engineering Team — Jan 2023 - Dec 2024
Member of Technical Staff 2 — *Bengaluru, India*

- Led end-to-end SDLC implementation of **Auto Sim Recovery**, architecting microservices-based distributed systems using Flask, RabbitMQ, Redis, Postgres, Temporal and Nomad. Reduced simulator recovery time from 5 hours to 10 minutes, increasing productivity for over **2,000 test environments** and handling 200+ daily operations with $\geq 95\%$ reliability.
- Designed and built the **Deployment Orchestrator Service** to manage one-click updates across **9,000+ on-prem VMs**, with automated qualification checks ensuring safe rollouts. Eliminated manual intervention by 99%, enhanced update reliability, and increased global infrastructure availability.
- Migrated simulator infrastructure from Ubuntu 14 to 22 using Packer, Ansible, Jenkins across 1,500+ environments, achieving 100% compatibility and **reducing deployment time** from hours to minutes through automated workflows.

Mercedes-Benz R&D India - Over-the-Air (OTA) Updates Team — Aug 2022 - Dec 2022
Software Engineer — *Bengaluru, India*

- Built scalable **ETL pipelines** for OTA updates data using PySpark on Databricks with Delta Lake architecture, processing 90TB+ historical and ongoing OTA updates data, enabling comprehensive data visibility for downstream analytics.
- Extended OTA campaign microservice by implementing a generic interface that streams data directly to Azure EventHubs, eliminating the need for post-campaign database queries, **enabling real-time data availability** for streaming analytics.
- Provided 24/7 **on-call support**, identified **two endpoints** with **high response times**, and facilitated resolution.

Software Engineer Intern — Mar 2022 - Aug 2022

- Built OTA updates analytics dashboard using Java **Spring Boot**, **Swagger** Codegen, **Vue.js** and **MongoDB** aggregation pipelines, enabling visibility for key data metrics and providing valuable business insights for vehicle update patterns.
- Automated deployment and scaling of service through **Azure DevOps CI/CD** pipelines and **Kubernetes** orchestration, with **OAuth2.0** integration for secure user authentication.

PROJECTS

- **Virtual Calendar** | Developed a full-stack virtual calendar application in Java with Swing GUI, featuring multi-calendar support, event **conflict detection using Interval Trees**, timezone management, and Google calendar **import/export compatibility**. Demonstrated use of **MVC architecture, design patterns, SDLC, and project management**.
- **DSA Panicle** | Educational **platform for algorithmic challenges**. Built with Docusaurus, and RST, with CI/CD pipelines using GitHub runners and Hostinger webhooks.
- **Yet Another Centralized Scheduler** | Developed a centralized scheduling framework similar to Hadoop YARN using **Python multithreading**. Demonstrated **master-slave architecture** with different job scheduling algorithms.
- **SEED Labs: Security Projects** | Implemented and analyzed cybersecurity attacks and defenses as part of Security courses. Key projects include hands-on implementation of buffer overflow, SQL injection, cross-site scripting (XSS), CSRF, sniffing, spoofing, TCP attacks, local DNS attacks, firewall evasion, Heartbleed, Shellshock, and Set-UID exploitation.
- **Search Engine Indexing Algorithm** | Developed PageRank algorithm on Hadoop, deployed the Hadoop cluster, used the MapReduce framework for distributed parallel data processing.

PUBLICATIONS

An Enhanced Deployment of 5G Network Using Multi-Objective Genetic Algorithm | Published in *IEEE*, presenting a genetic algorithm to optimize dense 5G base station deployment, minimizing cost while maximizing coverage and efficiency.

TECHNICAL SKILLS

Skills: Java, Python, Go, C/C++, R, JavaScript, Flask, Django, Spring Boot, Vue.js, JUnit, PyTest, Azure, Databricks, Temporal, Docker, Kubernetes, Git, GitHub Actions, JIRA, MongoDB, PostgreSQL, Redis, Azure EventHubs, RabbitMQ, Linux, Nomad, Ansible, Packer, Jenkins, Prometheus, OpenStack, Async I/O, Postman, Wireshark, CI/CD, Concurrency, Code Review, RCA, Incident Response, Monitoring, Troubleshooting, LLM, LangChain, Prompt Engineering, Claude Code

Certifications: AWS Fundamentals: Specialization, Web Application Security Testing with OWASP ZAP, Object Oriented Programming - Advanced (Java OOP), Foundations of Responsible AI Learning