

VIJAY KUMAR POLOJU

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SUMMARY

Experienced Software Engineer with 4+ years building scalable distributed microservices and backend systems using Java, Spring Boot, Kafka, and AWS. Proven track record designing REST APIs, serverless architectures, and CI/CD pipelines to improve reliability and deployment velocity. Led monolith-to-microservices modernization at ADP Vantage, architected serverless AWS infrastructure from the ground up, and built Kafka-based event-driven pipelines processing millions of events daily. Experienced in technical leadership, mentoring, and cross-functional collaboration across teams of varying scale.

TECHNICAL SKILLS

- **Languages:** Java, JavaScript, TypeScript, Python, Bash, SQL, HTML
- **Frameworks & Libraries:** Spring Boot, J2EE/Java EE, Node.js, React, Angular, Next.js, Junit, TestNG, Selenium BDD, JMeter
- **Cloud Platforms:** AWS (EC2, API Gateway, AWS Cognito, CloudWatch, S3, VPC, Lambda), GCP, Firebase, Terraform, Oracle Cloud, AWS CDK, Aurora, Serverless
- **DevOps & Infrastructure:** Jenkins, GitHub Actions, Docker, Kubernetes, CI/CD Pipelines, Helm, Linux System Administration, AWS CDK, Infrastructure as Code
- **Database Systems:** PostgreSQL, MySQL, MongoDB, Vector DBs (pgvector/FAISS)
- **AI & LLM Systems:** RAG (Retrieval Augmented Generation), LLM Fine-tuning, Transfer Learning, Prompt Engineering, Agentic AI, Evals & Guardrails, LangChain, LangGraph, Streamlit, Hugging Face, OpenAI APIs, Embeddings
- **Monitoring & Observability:** Structured Logging, Distributed Tracing, CloudWatch Dashboards & Alerts, AWS Lambda Powertools, Dead Letter Queues
- **Development Tools:** Visual Studio Code, Linux, JIRA, Git, Bitbucket, Spring STS, IntelliJ Idea, Anaconda, Docker, Ansible
- **System Design:** Scalable Microservices Architecture, Event-Driven Systems, Object-Oriented Programming, REST API Design, AI system design, Distributed Systems, Domain Modeling, Serverless Architecture, Distributed Systems
- **Core Competencies:** Backend Development, Software Architecture, Database Schema Design, Data Modeling, Data Structures & Algorithms, Performance Tuning, Technical Leadership, Mentoring, Accessibility (WCAG 2.1)

EDUCATION

University of Colorado Boulder

Aug 2024 - Apr 2026

Master of Science, Computer Science (GPA: 3.8/4.0)

- **Coursework:** GenAI-Software development, Object-Oriented Analysis and Design, Big Data Architecture, Linux System Admin, CS Capstone (sponsor pWin.ai)

Indian Institute of Technology Hyderabad (IIT-H)

Aug 2017 - Jul 2021

Bachelor of Technology, Computer Science (GPA: 3.7/4.0)

WORK EXPERIENCE

Aragorn Racing Corporation | Backend Engineer & Technical Lead (Co-op) : www.aragornracing.com

Sep 2025 - May 2026

- Lead **backend architecture and technical decision-making** in a 2-person engineering team for a **digital horse racing analytics platform**, owning **end-to-end system design**, infrastructure strategy, and **API architecture** while pitching technical proposals directly to the product owner
- Designed **domain models, PostgreSQL database schemas**, and migrations from scratch; delivered **secure REST APIs** with **AWS Cognito** authentication, input validation, pagination, API versioning, and **idempotent request handling**.
- Architected a fully **serverless AWS stack (API Gateway, Lambda, Aurora PostgreSQL Serverless v2 + Data API, EventBridge, SQS, S3, VPC private networking)**, eliminating traditional server provisioning in favor of **pay-per-use compute** to minimize operational costs.
- Built **CI/CD pipelines and Infrastructure as Code** using **AWS CDK**, replacing dependency on managed hosting platforms with custom **AWS infrastructure** to reduce projected hosting costs and increase deployment control.
- Implemented **structured logging and distributed tracing** with **AWS Lambda Powertools**, configured **CloudWatch dashboards and alerts**, and set up **Dead Letter Queues (DLQs)** for fault-tolerant event processing and reduced **MTTR**.

ADP | Software Engineer (ADP Vantage) : www.adp.com

Jul 2021 - Jun 2024

(Spring Boot, Angular, Selenium BDD, UI Automation, TypeScript, AWS, Postman)

- Built and optimized **Spring Boot microservices** and **REST APIs** for the **ADP Vantage payroll platform**; applied **performance tuning** via caching, connection pooling, and query optimization to improve throughput and reduce latency.
- Led the **modernization of legacy ADP Vantage monolith to microservices** architecture: defined service boundaries, introduced metrics, **distributed tracing**, and centralized logging, and validated system scalability under load with **JMeter**.
- Developed **CI/CD pipelines** with **Jenkins**, cutting release effort and improving **deployment speed by ~60%**
- Delivered a new **Angular Unified Interface** for the payroll platform, improving **page performance by ~45%** and reducing redundant backend calls by **~35%**.
- Led payroll UI components used by **500+ enterprise clients** serving **millions of employees**; drove requirements gathering, **WCAG-compliant** accessible interface implementation, and regression automation.
- Built **Apache Kafka** event-driven pipelines processing **1M+ messages/day** with **sub-second latency** to support multi-tenant to unified database migration; coordinated **Oracle GoldenGate** replication for **Oracle-to-PostgreSQL cutover** with comprehensive data modeling.
- Implemented automated **error-handling and retry framework** for data synchronization, reducing manual interventions; added **Selenium BDD** smoke and build verification tests, cutting **manual QA effort by ~80%**.
- **Mentored and onboarded 15+ new engineers** to their respective teams, facilitating knowledge transfer on codebase architecture, development workflows, and best practices.

University of Colorado Boulder | Teaching Assistant

Aug 2024 - Present

- Supported instruction for **50+ students per semester** across accessibility-focused courses, grading assignments and providing detailed feedback on **WCAG 2.1 compliance** and inclusive design principles.
- Evaluated student projects using **WAVE accessibility evaluation tools**, providing actionable recommendations to improve web accessibility and usability standards.
- Collaborated with professor to create and enhance **course materials**, suggesting curriculum improvements based on evolving accessibility standards and industry best practices.

PROJECTS

Pwin.ai | pwin.ai | *Capstone Project : pwinbook.com*

Aug 2025 - Apr 2026

- Architected a modular **Agentic RAG pipeline** with document loaders, chunking and embedding strategies, **vector store** integration, retrieval, and synthesis layers with response caching and safety guardrails.
- Built multi-tool **LangChain/LangGraph agents** using **planner/executor patterns** for task routing, web search, and tool use; added tracing and evaluation frameworks for reliability monitoring.
- Shipped a **Streamlit** application showcasing retrieval pipelines, agent hand-offs, and evaluation dashboards; integrated **pgvector and FAISS** for hybrid semantic search.

GetMyURI | app.getmyuri.com | *Founding Engineer (self project): app.getmyuri.com*

Jan 2025 - Jun 2025

- Designed and built **Spring Boot microservices** backend for URL shortening and redirection, leveraging **MongoDB's NoSQL** document structure to support custom alias hierarchies, and implemented scheduled jobs to sync view counts from **Redis to PostgreSQL** for analytics.
- Developed scalable backend services handling custom short link resolution, **location-based access control**, link expiration management, and password-protected link support.
- Designed **fault-tolerant microservices** architecture with multiple pods running concurrently, handling **200,000+ requests/day** with zero downtime.
- Implemented **location-based access authorization** using the **Haversine formula** to validate user proximity for secure link access.
- Deployed on **Google Kubernetes Engine (GKE)** with full **CI/CD pipelines** using **Jenkins and Helm** for automated container orchestration and deployments.