Unnikrishnan Namboothiri

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PROFILE

Backend engineer with hands-on experience building distributed systems, microservices, and developer tools. Built production-ready applications including VM orchestration platforms, CDN services, and database proxies using Java, Node.js, and cloud technologies. AWS Certified Cloud Practitioner with strong foundation in system design, concurrency, and database internals.

EDUCATION

Amrita Vishwa Vidyapeetham **Oct 2022 – Oct 2026**
Bachelor of Technology in Computer Science Engineering *Kollam, Kerala*

TECHNICAL SKILLS

Languages: Java, JavaScript/TypeScript, Python, SQL, Kotlin, C/C++
Backend Frameworks: Spring Boot, Node.js, Express.js
Databases: PostgreSQL, MySQL, Redis, SQLite, MongoDB
DevOps & Cloud: Docker, Kubernetes, AWS, Linux, Git, GitHub
Messaging & Streaming: Kafka, RabbitMQ
Frontend: React, Next.js, Electron.js

CERTIFICATIONS

AWS Certified Cloud Practitioner (CLF-C02) – Amazon Web Services *Aug 2025 – Aug 2028*
Introduction to Jenkins (LFS167) – Linux Foundation *Nov 2025*
Java Spring Framework, Spring Boot, Spring AI – Udemy *Nov 2025*

PROJECTS

QueueCTL – Background Job Queue System | **GitHub** *Oct 2025 – Nov 2025*

- Engineered lightweight CLI-first background job queue achieving near-zero idle cost by leveraging Java 21 virtual threads for high-concurrency worker pools without consuming OS threads.
- Implemented atomic job claiming using SQL-based locking with SQLite, eliminating double-processing issues and supporting exponential backoff retries with configurable Dead Letter Queue (DLQ).
- **Technologies:** Java 21, SQLite, Docker, Virtual Threads, Embedded HTTP Server

On-Demand Cloud VM Provisioning API | **GitHub** *Feb 2025 – Apr 2025*

- Built cloud-based VM provisioning service reducing setup time to 10-15 seconds by implementing automated hypervisor orchestration layer with RabbitMQ for async job processing.
- Designed RESTful API backend handling VM lifecycle management (create, configure, destroy) enabling developers and labs to deploy work environments without manual infrastructure setup.
- **Technologies:** Java Spring Boot, KVM, RabbitMQ, Shell Scripts, Next.js

Interceptor v1 – PostgreSQL Wire Protocol Proxy | **GitHub** *Aug 2025 – Nov 2025*

- Developed high-performance PostgreSQL wire-protocol proxy intercepting destructive queries (DROP, ALTER, TRUNCATE) for manual admin approval, preventing unauthorized database modifications.
- Implemented zero-copy forwarding for non-critical queries and persistent audit logging with SQLite, achieving minimal latency overhead while maintaining complete query history.
- **Technologies:** Node.js, PostgreSQL, SQLite, JWT Authentication, Server-Sent Events (SSE)

VergeCDN – Distributed Content Delivery Network | **GitHub** *May 2025 – Jun 2025*

- Built self-hostable, multi-node CDN service with CLI-based management, implementing distributed caching layer and cache invalidation through socket-based inter-node communication.
- Containerized entire infrastructure using Docker enabling single-command deployment across multiple edge nodes with Redis-backed session management.
- **Technologies:** Node.js, Express.js, Redis, Docker, WebSockets

DataClerk – Natural Language Database Interface | **GitHub** *Nov 2025*

- Created mobile application enabling business stakeholders to query databases using natural language, converting human-readable questions to SQL and displaying results as interactive charts and graphs.
- Developed secure backend ("Script Executor") enforcing read-only query execution with multi-table context awareness, preventing destructive operations while supporting cross-table analytics.
- **Technologies:** Kotlin, Jetpack Compose, Spring Boot, PostgreSQL, Docker, Gemini API

Xplore – Developer File Explorer | **GitHub** *Apr 2025 – May 2025*

- Developed cross-platform desktop file explorer with integrated terminal and SSH-based cloud VM connectivity, streamlining developer workflow by eliminating context switching between tools.
- Implemented command palette and automation script support reducing repetitive file operations through customizable keyboard shortcuts and batch processing.
- **Technologies:** Electron.js, React (Vite), TypeScript, TailwindCSS

OPEN SOURCE CONTRIBUTIONS

Whatomate – Zerodha.tech | **GitHub** *Jan 2026 – Feb 2026*

- Optimized campaign status update hot path by replacing redundant SELECT queries with PostgreSQL's RETURNING clause via GORM, reducing database load by 50% per webhook event during 100K+ recipient blasts.
- Fixed "phantom broadcast" bug by implementing RowsAffected checks, ensuring transaction atomicity and preventing empty WebSocket events for non-existent campaigns.
- Resolved theme synchronization issue in Vue.js dashboard by binding theme prop to vue-sonner Toaster component for real-time light/dark mode transitions.
- **Technologies:** Go, Vue.js, TypeScript, PostgreSQL, GORM, WebSockets

EXTRACURRICULAR ACTIVITIES

JPMorgan Chase Software Engineering Virtual Experience **Dec 2025**

Forage Job Simulation *Remote*

- Integrated Kafka into Spring Boot microservice consuming high-volume transaction messages with configurable topic management and embedded Kafka test framework for reliable testing.
- Implemented transaction validation and persistence layer using Spring Data JPA with H2 database, including entity modeling and atomic balance updates across relational User records.
- Connected microservice to external REST Incentive API using RestTemplate, processing incentive responses and incorporating them into transactional workflows with proper error handling.

Team Lead – Student Social Responsibility Program **2024**

Amrita Vishwa Vidyapeetham *Changanassery, Kerala*

- Led 5-member team presenting on temple architecture to school students, demonstrating connection between science, religion, and philosophy in Eastern thought.
- Facilitated interactive Q&A sessions engaging students in discussions about cultural heritage and historical insights beyond textbook learning.