

AMILA KUMARASEKARA

amilathushara15@gmail.com | +94702638129 | Sri Lanka | [LinkedIn](#) | <https://www.amilakumarasekara.me>

SUMMARY

Senior Software Engineer with 6 years of experience designing and building scalable backend systems, distributed services, cloud native platforms, and AI powered agent systems. Strong expertise in backend engineering, system architecture, distributed systems, database design, APIs, and cloud infrastructure, with hands on experience across Go, Node.js, TypeScript, PostgreSQL, AWS/Azure, Kubernetes, and Terraform. Experienced in engineering production grade AI agents with tool calling, orchestration, state management, RAG, multi agent workflows, and human in the loop controls. Proven ability to lead technical initiatives, mentor engineers, make architecture decisions, and deliver reliable, maintainable systems for complex business requirements.

WORK EXPERIENCE

Senior Software Engineer, Cue Labs

Oct 2024 – Present

- Leading the architecture, design, and delivery of scalable web platforms using **Go, Python, NestJS, Next.js, React, and TypeScript**, utilizing Agile methodologies to drive cross team engineering execution and set technical direction.
- Architected **distributed interservice communication** using **gRPC** for synchronous calls, **AWS SQS** for asynchronous social automation jobs, and **GCP Pub/Sub** for Gmail push notifications, improving service decoupling, fault isolation, and scalability across the platform.
- Engineered robust authentication, authorization, and encryption mechanisms (**JWT, OAuth2, RBAC, Argon2 password hashing**) across services, hardening platform security and safeguarding sensitive user data.
- Optimized database queries and implemented multi layered caching strategies (**PostgreSQL, Redis**), **cutting response times by 40%** and supporting **2M+ requests/day** across high traffic services.
- Engineered and managed production infrastructure leveraging AWS Services and Docker, automating CI/CD pipelines to deliver **zero downtime releases** and maintain high availability across multiple production environments.
- Architected and deployed cost effective serverless architectures using **AWS Lambda** to handle event driven microservices, reducing infrastructure overhead and improving system scalability.
- Designed and implemented **AI powered sales automation agents** that autonomously engage, qualify, and nurture leads across email, Slack, and CRM channels, integrating LLM based workflows with event driven platform services to streamline end to end customer interactions.
- Engineered agent workflows with **tool calling, state management, and human in the loop controls**, enabling AI agents to execute multi step sales and engagement tasks while maintaining predictable workflow behavior.
- Integrated **AI agents** with external services and business systems, including Gmail, Slack, CRM platforms, and internal APIs, using event driven architectures to coordinate asynchronous tasks and real time interactions.

Senior Software Engineer, Chekins

Jan 2022 – Sep 2024

- Designed and developed a hotel aggregation middleware service integrating multiple hotel rate providers, comparing supplier responses, and returning the best available rates to downstream applications.
- Optimized provider request handling for **low latency rate aggregation**, running concurrent third party searches with tuned timeouts, retries, and response caching to minimize end to end response time for downstream applications.
- Built the hotel aggregation service in **Go**, choosing **goroutine based concurrency** to **fan out** requests across multiple hotel providers in parallel, reducing **p95 aggregation latency** from **~2.5s to ~800ms**.
- Designed booking workflows with **idempotency controls** to prevent duplicate hotel reservations and duplicate payment processing during retries or repeated client requests.
- Developed and maintained booking, availability, pricing, and provider integration services for hotel reservation workflows, **orchestrating multi supplier data** flows to deliver consistent rates and reliable end to end booking experiences for downstream clients.
- Deployed and operated application services on a **Kubernetes** cluster in Digital Ocean, managing production database infrastructure hosted in **Microsoft Azure** with Azure Blob Storage for object and file storage.

- Owned **production reliability** across external supplier APIs, booking flows, payment processing, databases, and distributed services, leading root cause investigations and delivering fixes that minimized downtime and prevented recurrence.
- Led engineering delivery as technical lead, mentoring **3 junior engineers** on architecture, code quality, and testing — reducing code review cycle time by **20%** and implementing **TDD standards** (Jest) that prevented regressions across booking and payment APIs.
- Practiced test driven development (TDD) with Jest, writing tests before implementation to prevent regressions across idempotent booking and payment APIs.
- Adopted a product first mindset by **analyzing user behavior** with PostHog to **identify drop off points across booking funnels**, informing data driven feature decisions.

Senior Software Engineer, TravelPartners.ai

Mar 2023 – Sep 2024

- Built and maintained backend services using **NodeJS, NestJS, TypeScript, and Go** for travel and hotel reservation workflows, focusing on modular architecture, maintainability, and reliable third party integrations.
- Developed **hotel booking, availability, pricing, and supplier integration services**, supporting client facing applications and travel partner workflows.
- Integrated **hotel supplier and Amadeus flight APIs** to support hotel availability, exclusive member rates, and flight booking workflows.
- Designed backend services, **database schemas, and business logic** for client facing applications, with emphasis on reliability, performance, and maintainability.
- Investigated and resolved production issues across **backend services, databases, frontend applications, and third party integrations**, ensuring reliable booking and partner experiences.
- Collaborated with clients and development teams to translate business requirements into technical solutions and deliver features across multiple travel projects.
- Mentored junior engineers on backend development, system design, debugging, and code quality, providing technical guidance through code reviews and day to day engineering collaboration.
- Implemented **GraphQL** APIs to consolidate hotel booking, availability, and pricing data from multiple suppliers, reducing client side data fetching overhead and enabling efficient, typed queries for downstream applications.

Software Engineer, Ceyvora Labs

Sep 2020 – Dec 2021

- Engineered full stack web applications using Laravel, React, Node.js, Flask, and MySQL to manage relational data, serving **10,000 monthly active users** and improving page load speeds by **45% through performance optimization**.
- Developed **REST APIs** and automation systems powering **React Native** mobile apps and internal admin dashboards, enabling realtime data synchronization and streamlining operational workflows for clients.
- Integrated third party services including **PayPal** payments, SMS, and email notifications into e-commerce platforms, while optimizing performance through caching and database query tuning to ensure fast, reliable user experiences.
- Optimized application performance through **caching, database query optimization, indexing, and API improvements**, improving responsiveness under higher traffic.
- Developed responsive frontend interfaces with **React** and contributed to React Native applications, implementing API integrations, authentication, and data synchronization.

Software Engineering Intern, Ceyvora Labs

Mar 2020 – Aug 2020

- Assisted in developing web applications using **Laravel, React, Node.js, and MySQL**, contributing to both frontend and backend features.
- Developed and integrated REST APIs for web and mobile applications, working with structured data and third party services.
- Integrated services such as PayPal, SMS, and email notifications under the guidance of senior engineers.
- Worked closely with senior developers to investigate technical issues and implement maintainable solutions.

EDUCATION

MSc Cyber Security, University of Lancashire
Universal College Lanka - Reading

Oct 2026 - Oct 2027

PROFESSIONAL MEMBERSHIP

Member, BCS, The Chartered Institute for IT (MBCS)

2026

ADDITIONAL INFORMATION

Languages & Frameworks: JavaScript, TypeScript, Python, PHP, Go, Rust, React, Next.js, React Native, Node.js, NestJS, Express, Laravel, Flask, Flutter, FastAPI

Cloud & Infrastructure: AWS, Azure, GCP, Docker, Terraform, Kubernetes (K8s), NGINX, Vercel, Linux, OVH, Hetzner, Digital Ocean

AWS & Cloud Services: AWS ECS, S3, RDS, Lambda, SQS, CloudWatch, Multi-AZ Deployments, Auto Scaling

Databases & Search: PostgreSQL, MySQL, MongoDB, Redis, Azure Cosmos DB, Elasticsearch, Database Design, Query Optimization, Indexing, Caching, Database Replication, Schema Migrations

Messaging & Event Driven Systems: RabbitMQ, AWS SQS, GCP Pub-Sub, BullMQ, Redis Pub-Sub, Asynchronous Processing, Message Queues, Dead Letter Queues, Event-Driven Communication

APIs & Service Communication: REST APIs, gRPC, WebSockets, Server-Sent Events (SSE), Socket.IO, Webhooks, Google APIs, Stripe, PayPal, API Integrations

Backend & Distributed Systems: Concurrency, Goroutines, Worker Pools, Idempotency, Rate Limiting, Retries, Background Job Processing, Fault Tolerance, Load Balancing, Horizontal Scaling

Security & Authentication: JWT, OAuth 2.0, RBAC, Auth0, Encryption, API Security, Authentication & Authorization, Prompt Injection Protection

DevOps & Observability: CI/CD, Git, GitHub, GitLab, GitHub Actions, CloudWatch, Prometheus, Grafana, Sentry, Monitoring, Logging, Performance Optimization, Zero Downtime Deployments, Blue-Green Deployments

Software Architecture: Microservices Architecture, Event Driven Architecture, Distributed Systems, MVC, High Availability, Scalable Architecture

Tools & Workflow: Jira, ClickUp, Notion, Agile/Scrum

AI & Agent Engineering: AI Agents, Agent Harness Engineering, LangChain, RAG, Vector Databases, Embeddings, LLM APIs, Tool/Function Calling, Agent Orchestration, Multi Agent Systems, Prompt Engineering, Human in the Loop, AI Guardrails

Testing & Quality: Jest, Unit Testing, Integration Testing, Test-Driven Development (TDD), API Testing, Concurrency Testing, Race Detection, Load Testing, Performance Testing

Engineering Leadership: Technical Leadership, Code Reviews, Mentoring, Technical Documentation