Ashwanth Fernando

Principal Software Engineer

Distributed Systems | Backend Engineering | AWS & GCP | Microservices

New York / San Francisco

E3 Visa Eligible — no lottery, 2-week processing

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Summary

- Hands-on principal-level engineer/architect with **15+ years** building and scaling **distributed systems** at **Apple**, **Canva**, **eBay**, **Atlassian**, and **Walmart**. Led teams up to 12; authored **5 patents**; shipped **99.999% availability** load balancers and **10x commerce dialog conversions**.
- Built platform systems at **Walmart** (Fortune 1) enabling an **8,000-developer ecosystem**, drove migration to open-source stack **saving $100+M/yr**. Scaled **Canva Search 20M→80M MAU** (4x). Shipped 7 live collab products driving **10+M MAU growth**.

Technical Skills

Languages: Java (primary), Go, Python, Kotlin, Scala, Node.js   **Cloud:** AWS (EC2, RDS, DynamoDB, SNS/SQS, ElastiCache), GCP (BigQuery, Pub/Sub)
Infrastructure: Kafka, Spark, Redis, ZooKeeper, Solr, Spinnaker, Terraform, Kubernetes, Helm, Docker
Frameworks: Spring, GraphQL, gRPC, Temporal, Protobuf   **AI/ML:** LLMs, RAG, LangGraph, agentic workflows

Experience

Principal Software Engineer, Tentacle Software   Jan 2022 - Present

Boutique consultancy for high-throughput, low-latency distributed platforms. Project duration 4 months to 1.5 years.

Macquarie Bank   *Feb 2025 – Present*
- Led cross-functional performance program across 5 teams (20+ microservices), fixing caching, reactive processing, DB schema, and JVM GC issues. **p95 down 14%, p99 down 9%, throughput up 3.5x**. *Java, Spring, Reactor, Redis, GraphQL, Spanner, GCP.*

WEX   *May 2024 – Jun 2024*
- Modernized Kafka → Spark → BigQuery pipeline processing **1.2M+ daily events** with exactly-once delivery, reducing reconciliation lag **by 65%**. *Spark, Go, Kafka, Docker.*

Coles   *Apr 2023 – May 2024*
- Architected and built BFF service for Coles online grocery, cutting **end-to-end latency by >40%**. *Java, Kotlin, Spring, Reactor, Azure, ArgoCD.*

Atlassian   *Feb 2022 – Mar 2023*
- Designed consistent-hashing active-active load balancer for Elasticsearch, increasing **Confluence search availability +7% globally**. *Java, Spring, ZooKeeper, ElasticSearch, AWS.*

Founding Engineer, Packsmith   Jul 2024 – Nov 2024
- Led end-to-end technical strategy for AI-driven last-mile logistics platform. Built priority tagging for Shopify feeds, improving shipping times **by 140%**. Built Temporal workflows for shipment orchestration. *Go, GCP, Temporal, Kubernetes, Terraform, Pub/Sub.*

Engineering Manager / Staff Engineer, Canva ($42B design platform)   Nov 2018 - Jan 2022
- Scaled **Canva Search 20M→80M MAU** (4x) by decomposing monolith into microservices, re-architecting Solr indexes, and implementing cache deduplication. Delivered autocorrect, query suggestions, and trending insights. *Java, Solr, MySQL, Redis, AWS.*
- Scaled team from 0→6 engineers, shipping 7 live collab products in 2 years driving **10+M MAU growth (20% of Canva's users)**. Owned hiring, performance reviews, and roadmaps while remaining hands-on.

Senior Staff Engineer, eBay, San Jose, California   Nov 2014 - Aug 2018
- Built **dynamic config system + page assembler** for eBay's core search, enabling business teams to adapt UI/UX without engineering, cutting **months off release cycles**. Built **dialog SDK** (Facebook, Google Assistant integrations), **increasing Shopbot sales 10x**.
- Created **open-source regression-testing framework (Regressr)**, adopted across departments. Led teams of **6+ engineers**.

Principal Engineer (ICT 5), Apple, Cupertino, California   Sep 2013 - Oct 2014
- Built **globally distributed load balancer** with **99.999% availability** for device activations. Led **12 engineers**; built config management, heartbeat monitoring, and deployment orchestration. *Node.js, ZooKeeper, Java, Akamai GSLB.*

Staff Software Engineer, Walmart, San Bruno, California   Oct 2010 - Sep 2013
- Built platform for **8,000+ developers**: deployment parallelization for **300+ apps (80% faster deploys)**, enterprise config management for **200+ microservices,** and auto-CRUD API generator saving **8+ months of manual work**. Led **Walmart Canada SEO platform**, reducing **bounce rates 30%**. *Java, Spring, ZooKeeper, Groovy.*

EXTENDED CAREER HISTORY

Software Engineer, Best Buy   Aug 2005 - Oct 2009

Software Engineer, Pearson VUE   Nov 2009 - Apr 2010

Software Engineer, Walgreens   Apr 2010 - Sep 2010

Education

Master of Computer Science, Anna University | **Bachelor of Computer Science**, Madras University

Patents

- **Systems and methods for interactive presentations** - US 20230205552
- **Systems and methods for storing and replaying presentations w/ video and audio** - US 20230205808
- **Systems and methods for remotely controlling electronic presentations** - US20230076902A1
- **System and method for increasing throughput of a PaaS system** - US 9342369 B2
- **Verification of complex multi-application and multi-node deployments** - US 20140109082

Publications

- Building a Data-Driven Autocorrection System - Canva Engineering Blog
- Introducing Regressr: An Open Source Regression Testing Tool - eBay Tech Blog