

Murali Krishtna

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Professional Summary

A well-rounded **Software Engineer** with ~5 years of experience building scalable systems across FAANG and early-stage startups. Backend-leaning but full-stack capable, with a track record in designing high-traffic APIs, distributed systems, and shipping end-to-end. I approach software as an engineering discipline. It is so much beyond just code - from design, testing, operability, etc all the way to business impact. Currently super excited to be building software in the era of AI and Agents!

Experience

Software Development Engineer "Intern"

Apr 2025 – Aug 2025

Pavepal.ai ↗

- Transformed a *barebones HTML+JS proof-of-concept* into a **production-grade full-stack application** used by live clients.
- Established a structured development workflow across dev/beta/prod/etc environments with *full CI/CD pipelines*. Evaluated and selected the entire tech stack (MongoDB, Next.js, CDN, OAuth providers, etc.) based on current and future requirements.
- Built the backend end-to-end via AWS CDK including *OAuth, S3, API Gateway, MongoDB (setup+scripts)*, and 4 APIs to deliver road quality and defect data based on client requirements.
- Built the frontend with CDN integration, *custom JWT authentication/refresh logic with Cognito*, and 2 additional business UX features to render defects on maps.

Software Development Engineer II

2022 – 2024

Amazon

- Built the “**Collection**” Tab ↗ on Amazon’s Product Page, developing the frontend, backend and event-driven data systems, driving a **10% uplift in pickup orders (~10K/day)**
- Proposed and led a solution with DHL to validate DHL customer-ids on Amazon.de, preventing incorrect entries and **eliminating ~5K failed deliveries monthly** in Germany
- Designed a *low-latency (~20 ms), high-traffic (4K+ requests per second) API* to display the availability of nearby Pickup Locations in Checkout, invoked every time an eligible customer enters checkout.
- Mentored junior engineers and interns on tasks and career development. Conducted **~10+ interviews** and assessed various system design decisions.

Software Development Engineer I

2020 – 2022

Amazon

- Designed and implemented a highly performant, core API to retrieve (driving-distance or ML-based) Pickup Locations, handling **200+ calls per second** with a **sub-150ms** latency constraint.
- Centralized partner-specific configurations used across multiple teams into a single data store, by creating a common access library and a microservice for gated operations, **reducing manual dev effort by ~4 days per partner**.
- Identified a critical delivery date gap blocking Prime’s launch on Amazon.pl and **led** the solution development across 5 central teams and Amazon.pl leadership to deliver the fix, *enabling the Poland Prime launch*.
- **Managed service readiness to handle higher loads** on Black Friday and Prime Day events. Enabled dynamic distributed throttling across services to eliminate bot-related service overloads.

Recent Projects

AI Cooking Assistant

2026

LangGraph, FastAPI, Next.js

- Designed an offline **agentic LangGraph pipeline** with tool-calling nodes for source transcription (recipe blog, video, etc), structured recipe extraction, and refinement passes for enriching missing data from the recipe, all while respecting the original recipe’s intent and taste.

- Built another **live cooking agent** that tracks progress across recipe stages, responds to user queries, provides sensory cues (visual, aroma, etc), and dynamically helps fix mid-cook issues like flavor imbalances with corrective steps.

Atomic Habits AI Journal

2025

Langchain, Next.js, Django

- Built an AI journaling app based on the *Atomic Habits* identity-change framework. The system suggests identity shifts based on desired Habits and analyzes journal entries to classify daily actions as *votes for or against* the user's target identity shifts.
- Layered **user metrics** on top to detect positive identity shifts from voting patterns and reinforce them through targeted prompts and feedback.

Algorithmic Trading Platform

2025

VectorBT, FastAPI, Binance APIs, AWS

- Built a **backtesting-as-a-framework** pipeline with automated data ingestion from yfinance and Binance into S3 and on-demand backtests on *Spot EC2 instances* for cost-efficient compute.
- Built support for existing candlestick and custom strategies for paper trading and algorithm experimentation. Validated the framework for correctness against TradingView.
- Implemented a one-shot **AI code transpilation pipeline** that converts PineScript/Python strategies into VectorBT-compatible code, with a sandbox execution step to validate runtime correctness before deployment. This helped achieve **~10-100x faster backtests** for simple strategies.

Skills

Programming : Java, TypeScript, Python, SQL

Software Engineering : Clean Code, Design Patterns, SOLID, System Design, Test-Driven Development, Alarm-Monitoring Stacks, Infrastructure As Code, etc.

Cloud : AWS CDK, EC2, ECS, S3, DynamoDB, SQS, Cognito, AWS Lambda, API Gateway, CFN, MongoDB

Frameworks : Langgraph, Langchain, PyTorch, Spring Boot, Django, React JS, Next JS

Education

Simon Fraser University University

2024 - 2025 (expected)

M.Sc in Computer Science

Amrita University

2016 - 2020

B.Tech in Computer Science