# Aviral Garg

**Senior Software Engineer | AI/ML & Full-Stack Development**

Vancouver, British Columbia, Canada  
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## Technical Skills

**Languages & Frameworks:** Python, TypeScript, React, Node.js, FastAPI, LangChain  
**AI/ML:** PyTorch, SageMaker, NLP, LLM, RAG, MLOps, Time-Series Forecasting, Feature Engineering  
**Cloud & Infrastructure:** AWS (CDK, Lambda, Step Functions, DynamoDB, Athena), Azure, Serverless Architecture  
**DevOps & Tools:** CI/CD, Docker, Git, Performance Optimization, System Design, API Design

## Professional Experience

### Software Development Engineer — Amazon Beauty Tech

*Vancouver, BC • February 2021 – March 2025*

**System Architecture & Leadership** • Led 8-person cross-functional team developing Material Property Extraction system with end-to-end ML pipeline architecture  
• Architected event-driven serverless infrastructure processing 40+ TB daily data using AWS Step Functions, Lambda, and DynamoDB  
• Designed multi-stage deployment pipeline (alpha/beta/gamma/prod) with AWS CDK, reducing deployment time by 60%

**AI/ML Innovation** • Built demand-forecasting ML models boosting prediction accuracy by 25% and reducing overstock costs by 15%  
• Implemented synthetic data augmentation techniques improving time-series forecasting accuracy by 8%  
• Developed VTO Discovery system integrating AR/VR microservices with real-time catalog processing

**Performance & Scale** • Optimized distributed ML training workloads, mentoring 2 ML engineers and 1 researcher on scaling techniques  
• Implemented exponential backoff retry mechanisms and CloudWatch monitoring for production reliability  
• Established cross-team collaboration with Amazon catalog team for SNS/SQS integration

**Recognition** • Won 1st place at Amazon 2022 Hackathon leading 4-person team developing AR iOS makeup tutorial application

### Software Development Engineer — Amazon Prime Pantry

*Vancouver, BC • June 2020 – February 2021*

**Performance Engineering** • Optimized critical APIs reducing page-load impact by 37% and increasing add-to-cart/checkout rates by 2.5%  
• Automated performance, stress, and load testing on ECS, decreasing SEV-3 incidents by 40% weekly  
• Integrated Amazon CodeGuru Profiler into team workflows, streamlining performance analysis across projects

**Infrastructure & Cost Optimization** • Drove AWS CDK adoption across teams for CI/CD pipelines, saving 12+ developer-hours weekly  
• Achieved $30K annual cost savings through focused AWS infrastructure optimization and usage policy implementation  
• Deployed comprehensive monitoring dashboards and alerting systems for real-time service health tracking

### AI Software Engineer Intern — T4G Limited

*Vancouver, BC • October 2018 – December 2019*

**Business Impact** • Delivered Named-Entity-Recognition chatbot proof-of-concept securing $100K contract  
• Improved promo-code generation efficiency by 40%, enabling 4 additional contracts and doubling department profits  
• Automated 10-year version history extraction from 15 applications, saving 7 developer-hours weekly

**Technical Implementation** • Built NLP chatbots on Azure using Node.js, Cosmos DB, and SQL serving 50+ million users globally  
• Developed and maintained C# desktop applications and SSIS packages for enterprise-scale deployment

## Key Projects

### Resume Coach — *AI-Powered Career Platform*

**Technologies:** React 19, TypeScript, AWS Lambda, DynamoDB, OpenAI GPT-4, LangChain, CDK

• Built full-stack serverless web application providing AI-powered resume optimization and career guidance  
• Implemented LLM-based analysis with contextual chat system and session persistence using DynamoDB TTL  
• Deployed production application at [coach.aviralgarg.com](https://coach.aviralgarg.com) with custom domain and SSL  
• Established comprehensive CI/CD pipeline with GitHub Actions, automated testing, and multi-region deployment

### FastAPI Stock Gainers — *Real-Time Financial Data Platform*

**Technologies:** FastAPI, SQLAlchemy, PostgreSQL, Yahoo Finance API, JWT Authentication

• Developed full-stack application for real-time stock market tracking with user authentication and admin dashboard  
• Integrated Yahoo Finance API with auto-refresh mechanism and color-coded visualization for gains/losses  
• Implemented secure JWT-based authentication with password recovery and email notification system  
• Deployed on Render.com with PostgreSQL persistence and responsive Bootstrap UI

### Bob — *Voice-Enabled Development Platform*

**Technologies:** Python, Real-time Speech Processing, Multi-threading, State Machine Architecture

• Created hands-free development platform eliminating manual typing and increasing AI platform capacity by 40x  
• Implemented zero speech data loss during processing with real-time speech-to-tool-calls conversion  
• Built accessibility solution for developers with physical limitations, enabling screen-free development workflow  
• Designed multi-threaded voice assistant with 8 operational modes and sophisticated state management

## Education & Certifications

**Bachelor of Applied Science, Computer Engineering** *(Software Engineering Major)*  
University of British Columbia • Vancouver, BC • 2019

**Machine Learning Switch Up Program**  
Interview Kickstart • 2024  
*Advanced ML algorithms, data science techniques, and AI system design*

## Leadership & Recognition

**Team Leadership:** Led cross-functional teams of 8+ engineers across multiple disciplines and product areas  
**Mentorship:** Mentored 2 ML engineers and 1 ML researcher on distributed training and production scaling  
**Innovation:** 1st place Amazon Hackathon winner with AR/VR application demonstrating technical creativity  
**Community Impact:** Lead Instructor at Canada Learning Code, teaching 30+ students programming fundamentals