

# Aviral Garg

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## SUMMARY

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A highly creative Full Stack Software Engineer with over 5 years of experience specializing in the design, development, & maintenance of scalable, cloud-based applications that leverage ML & Generative AI. Proven expertise in building end-to-end, AI-driven solutions & automation pipelines on AWS that accelerate product development & enable rapid experimentation.

## SKILLS

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- **AI/ML:** Generative AI (OpenAI, Anthropic, Gemini, Ollama), Agentic Orchestration & Frameworks, MCP, RAG, NLP, LLMs, Model Deployment (SageMaker Endpoints, Batch Transform), Vector Databases, Python (ML Libraries)
- **Cloud & DevOps (AWS):** Lambda, SageMaker, API Gateway, DynamoDB, Cognito, AWS CDK & CloudFormation (IaC), SAM, SSM, Step Functions, S3, EC2, ECS, CloudWatch, X-Ray, SNS, SQS, Glue, Athena
- **Languages & Frameworks:** Python (Flask, FastAPI), Node.js, React, TypeScript, Kotlin
- **Developer Tools:** Git, Docker, Cursor, Windsurf, Linear, Playwright, Unity3D

## EXPERIENCE

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### Software Engineer

#### Amazon, Beauty Tech Team

February 2021 – March 2025, Vancouver, BC

- Led a team of 8 engineers, designers, & data scientists to deploy serverless data pipelines with 50% increased efficiency.
- Leveraged AWS Step Functions, Lambda, DynamoDB, SageMaker, & Athena; automatically scaled for growth, processed 40TB/day of product catalog data, & served 40M+ monthly customers across 15+ countries.
- Built 4-staged AWS CDK CI/CD pipelines using CloudWatch & X-Ray for granular system monitoring & bottleneck tracing. Received org-wide accolades for robust documentation & operational readiness for every step of the SDLC.
- Built internal-documentation-powered AI agents to provide instant answers to CI/CD admin questions, identify documentation gaps, & flag outdated content. Improved question resolution time by 82%, with projected savings of 240+ dev-hrs/month from integration with the internal admin ticketing system.
- Led an organization-wide documentation initiative, establishing a systematic platform for subject-matter-expert reference & reaching 100% completion of product & CI/CD documentation for the Beauty Tech organization.
- Spearheaded CI/CD-driven store-page-builder project for Amazon clients using React & Python.
- Integrated external microservices & A/B testing framework, increasing client customization capabilities by 300%.
- Automated monthly business reports for the recommendations team, reducing manual reporting time by 90%.
- Led a team of 4 to win first place at the Amazon 2022 Hackathon with an Augmented Reality iOS makeup-tutorial app.

### Software Engineer

#### Amazon, Prime Pantry Team

June 2020 – February 2021, Vancouver, BC

- Architected robust Kotlin applications achieving 100% test coverage for Prime Pantry API development.
- Optimized API performance, reducing page-load impact by 37% & increasing add-to-cart conversion rates by 2.5%, which directly contributed to over \$3 million monthly revenue for the Prime Pantry platform.
- Cut setup time by 75% & saved 3,528 dev-hrs/year by automating Prime Pantry API developer onboarding & environment setup while eliminating setup-related errors.
- Built automated CI/CD pipelines in AWS CDK, saving 12+ dev-hrs/week & cutting deployment errors by 95%.
- Delivered \$30K in annual cost savings through systematic AWS CI/CD optimization & usage policy implementation.
- Led organization-wide CodeGuru Profiler adoption across 7 projects, reducing on-call incidents & maintenance hours.

### AI Software Engineer

#### T4G Limited

October 2018 – December 2019, Vancouver, BC

- Architected NLP chatbots with full CI/CD, leveraging Azure DevOps, using Node.js & SQL, securing \$100K+ contracts.
- Demonstrated AI capabilities to enterprise clients, establishing the company's reputation in the AI/ML space.
- Optimized promo-code generation, achieving 40% efficiency improvement & enabling 4 additional high-value contracts.
- Automated extraction of 10 years of Git version history from 15 applications, saving 7 dev-hrs/week with Python scripts.

## Software Engineer

Texavie Technologies Inc.

December 2017 – May 2018, Vancouver, BC

- Engineered cross-platform mobile, desktop, & mixed-reality headset proof-of-concepts in Unity3D.
- Demonstrated wearable prototypes, securing investor interest & validating product-market fit for AR/VR technologies.
- Developed critical prototype debugging tools reducing calibration time by 60% & enabling on-time product launch.
- Built cross-platform game development pipelines for Windows, macOS, & Linux, doubling the target customer base.

## PROJECTS (2025)

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### Bob – AI-Powered Development Assistant

- Built a multi-threaded personal voice assistant with 8 operational modes for hands-free development & accessibility.
- Reduced Agentic AI platform costs by 40x through extensive prompt engineering & optimization techniques.
- Implemented zero speech data loss during processing with real-time speech-to-tool-calls conversion.
- Integrated OpenAI Whisper for local ML-based speech recognition with real-time audio processing pipeline.

### Live Transcriber (7.8K downloads) – Real-Time Speech Processing

[pypi.org/project/livetranscriber](https://pypi.org/project/livetranscriber)

- Deployed a multi-threaded open-source Python package with real-time speech transcription & zero data loss.
- Architected a single-file WebSocket wrapper around Deepgram API with async/await supporting sync & async callbacks.
- Implemented comprehensive resource management with automatic cleanup, graceful shutdown, & error handling.
- Created a seamless PyPI distribution with proper dependency management, enabling pip installation & integration.

### Pre-bunker health communications system – Health Misinformation Prevention

[github.com/gaviral/pre\\_bunker\\_health\\_communications\\_system](https://github.com/gaviral/pre_bunker_health_communications_system)

- Built AI agents for health misinformation prevention, simulating public reactions & generating evidence-backed prebunks.
- Created a comprehensive prototype with implementation across 19 versions achieving 65–80% risk reduction.
- Built a 5-stage pipeline: Claim Extraction, Risk Assessment, Audience Simulation, Evidence Validation, Countermeasures.
- Developed 12 specialized agent personas for comprehensive audience simulation with multi-source evidence validation.
- Created a FastAPI web interface with async processing & real-time risk assessment.
- Developed a novel Misinterpretability@k metric for quantifying health communication risk.

### Resume Coach – Full-Stack AI Application

[coach.aviralgarg.com](https://coach.aviralgarg.com)

- Built full-stack GPT-powered AI app with LangChain on AWS Lambda, API Gateway, DynamoDB, S3 & CloudFront.
- Created a React 19 + TypeScript frontend with a CI/CD pipeline using GitHub Actions, deploying to production.
- Implemented session persistence with DynamoDB TTL & contextual follow-up chat system.

### Stock Gainers – Full-Stack Real-Time Market Tracker

- Built a real-time stock market tracking application with FastAPI and SQLAlchemy ORM supporting PostgreSQL & SQLite.
- Integrated Yahoo Finance API for real-time stock market data with comprehensive user authentication system.
- Created an admin dashboard for database management with responsive Bootstrap UI and color-coded visualization.
- Deployed the application in production on AWS with auto-refresh mechanism and custom stock symbol tracking.

## EDUCATION

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### Machine Learning Program

Interview Kickstart • 2025

- Coursework: EDA & Feature Engineering, Regression & Classification, Model Evaluation, Model Fine-Tuning, Supervised, Unsupervised & Reinforcement Learning, Neural Networks, NLP, Agents Frameworks.

### B.A.Sc., Computer Engineering (Software Engineering Major)

University of British Columbia • Vancouver, BC • 2019