

# Aviral Garg

📍 Vancouver, British Columbia, Canada ✉ aviral.garg@icloud.com 🌐 in/LinkedIn

## SKILLS

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- **Core:** Python, Azure DevOps & Cost Management, AWS DevOps CI/CD (AWS CDK – Cloud Development Kit, CloudFormation, AWS Pipelines, AWS Data Pipelines), Automated Windows deployment (Chocolatey), Windows Batch Scripting.
- **Cloud:** Azure Functions, CosmosDB, Azure Blob Storage, AWS Step Functions, AWS Lambda, DynamoDB, Athena, SNS, SQS.
- **AI:** Local-first AI agents, AI-automated documentation, EDA, Feature Engineering, NLP, LLM, RAG, Time-Series.

## EXPERIENCE

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### Software Development Engineer

#### Amazon Beauty Tech

February 2021 – March 2025, Vancouver, BC

- Built internal-documentation-powered AI agents to provide instant answers to CI/CD admin questions, identify documentation gaps, and flag outdated content.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 a cross-functional team of 8 engineers and data scientists to deploy AWS Step Functions serverless data pipelines with 50% reduced execution time. Pipelines automatically scaled for growth processing 40+ TB of product catalog data daily and powering Makeup Virtual Try-On experience for 40M+ monthly customers across 15+ countries.
- Built 4-staged CI/CD python build-chains with granular system monitoring, and bottleneck tracing using CloudWatch & X-ray. Received org-wide accolades for robust documentation and operational readiness for every step of the SDLC.
- Led organization-wide documentation workshop establishing systematic platform for subject-matter-expert reference and reaching 100% completion of product and CI/CD documentation of the Beauty Tech Organization.
- Spearheaded CI/CD-driven store-page-builder project for Amazon clients using React and Python.
- Integrated external microservices and A/B testing framework increasing client customization capabilities by 300%.
- Automated Monthly Business reporting for Recommendations reducing manual reporting time by 90%.
- Achieved 100% stakeholder satisfaction across all reporting consumers through automated system implementation.
- Won first place at Amazon 2022 Hackathon with Augmented Reality iOS makeup-tutorial app leading a four-person team.

### Software Development Engineer

#### Amazon Prime Pantry

June 2020 – February 2021, Vancouver, BC

- Architected robust Kotlin applications achieving 100% test coverage for Prime Pantry API development.
- Conducted weekly on-call troubleshooting complex build, release, and tooling issues supporting development.
- Automated developer onboarding by automating environment setup processes reducing setup time by 75%.
- Saved 3,528 developer hours annually across 7-person team while eliminating setup-related errors.
- Optimized API performance reducing page-load impact by 37% and increasing add-to-cart conversion rates by 2.5%.
- Directly contributed to millions in additional revenue for Prime Pantry platform through performance improvements.
- Championed AWS CDK adoption across development teams for standardized CI/CD pipelines.
- Eliminated manual deployment processes by building automated CI/CD infrastructure saving 12+ developer-hours weekly while reducing deployment errors by 95%.
- Delivered \$30K annual cost savings through systematic AWS infrastructure optimization and usage policy implementation.
- Led organization-wide CodeGuru Profiler adoption across 7 projects reducing on-call incidents and maintenance hours.

### AI Software Engineer

#### T4G Limited

October 2018 – December 2019, Vancouver, BC

- Delivered enterprise-grade chatbots with full CI/CD leveraging Azure DevOps using Node.js, Cosmos DB, and SQL.
- Optimized promo-code generation achieving 40% efficiency improvement enabling 4 additional high-value contracts.
- Deployed, managed and tested physical Windows-computers for Impark/HangTag parking enforcement vehicles.
- Automated extraction of 10 years of git version history from 15 applications saving 7 dev hours weekly with Python scripts.
- Architected Named-Entity-Recognition chatbot proof-of-concept using NLP techniques directly securing \$100K contract.
- Demonstrated AI capabilities to enterprise clients establishing company's reputation in AI/ML space.
- Doubled department's yearly profits directly contributing to company's revenue growth and market expansion.
- Developed mission-critical C# desktop applications and SSIS data integration packages serving 50+ million users globally.

## Software Engineer

Texavie Technologies Inc.

December 2017 – May 2018, Vancouver, BC

- Engineered cross-platform mobile, desktop, and mixed-reality headset proof-of-concepts in Unity3D.
- Demonstrated wearable prototypes securing investor interest and validating product-market fit for AR/VR technologies.
- Developed critical prototype debugging tools reducing calibration time by 60% enabling on-time product launch.
- Saved weeks of development effort while ensuring quality standards for consumer-ready AR/VR devices.
- Architected cross-platform game development pipelines for Windows, macOS, and Linux doubling target customer base.

## PROJECTS (2025)

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### Bob

- Built multi-threaded personal voice assistant with 8 operational modes for hands-free development and accessibility.
- Reduced Agentic AI platform costs by 40x through extensive prompt engineering and optimization techniques.
- Implemented zero speech data loss during processing with real-time speech-to-tool-calls conversion.
- Created accessibility solution for developers with back pain, visual impairments, and typing difficulties.
- Built multi-threaded voice assistant with 8 operational modes and state machine architecture.
- Integrated OpenAI Whisper for local ML-based speech recognition with real-time audio processing pipeline.

### Live Transcriber (7.7k downloads)

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

- Deployed multi-threaded open-source Python package with real-time speech transcription and zero data loss.
- Architected single-file WebSocket wrapper around Deepgram API with async/await supporting sync and async callbacks.
- Designed flexible configuration system allowing override of Deepgram parameters while maintaining Nova-3 defaults.
- Implemented comprehensive resource management with automatic cleanup, graceful shutdown, and error handling.
- Created seamless PyPI distribution with proper dependency management enabling pip installation and integration.

### Pre-bunker health communications system

[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 comprehensive prototype with implementation across 19 versions achieving 65–80% risk reduction.
- Built 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 FastAPI web interface with async processing and real-time risk assessment.
- Developed novel Misinterpretability@k metric for quantifying health communication risk.

### Resume Coach

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

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

### FastAPI Stock Gainers

- Built 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 admin dashboard for database management with responsive Bootstrap UI and color-coded visualization.
- Deployed production application on Render.com with auto-refresh mechanism and custom stock symbol tracking.

## EDUCATION

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### Machine Learning Switch Up Program

Interview Kickstart • 2025

- Exploratory Data Analysis, Supervised, Unsupervised & Reinforcement Learning, Neural Networks, Agentic Frameworks

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

University of British Columbia • Vancouver, BC • 2019