Aviral Garg

⚲ Vancouver, British Columbia, Canada ✉ aviral.garg@icloud.com 🔗 in/LinkedIn

SKILLS

- **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, 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

Software Development Engineer

Amazon Beauty Tech   February 2021 – March 2025, Vancouver, BC

- *Project MPE*: Led a cross-functional team of 8 engineers and data scientists to design 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 AWS CloudWatch & X-ray. Received org-wide accolades for robust documentation and operational readiness.
- *Project Scout*: 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AI agents** to provide instant answers to CI/CD admin questions, identify documentation gaps, and flag outdated content.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 due to integration of internal admin ticketing systems.
- *Documentation Excellence*: 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 Org.
- *Project Haussmann*: Spearheaded **CI/CD-driven** storepage-builder development for Amazon clients using React and Python.
- Integrated external microservices and A/B testing framework increasing client customization capabilities by 300%.
- *Business Intelligence Project*: Architected automated Quarterly and Monthly Business Review reporting pipelines for Beauty Tech Recommendations Team reducing manual reporting time by 90%.
- Achieved 100% stakeholder satisfaction across all reporting consumers through automated system implementation.
- *Amazon Beauty Consultant*: Won first place at Amazon 2022 Hackathon with AR 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.
- 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 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.
- 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.
- 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**
- **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.
- Optimized promo-code generation achieving 40% efficiency improvement enabling 4 additional high-value contracts.
- Doubled department's yearly profits directly contributing to company's revenue growth and market expansion.
- Delivered enterprise-grade Natural Language Processing chatbots on Azure cloud using Node.js, Cosmos DB, and SQL.
- Developed mission-critical C# desktop applications and SSIS data integration packages serving 50+ million users globally.
- Ensured 99.9% uptime and zero data loss across distributed systems.

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 prototype concepts securing investor interest and validating product-market fit for emerging 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.

PROJECT (2025)

Bob
- Built multi-threaded macOS voice assistant with 8 operational modes for hands-free development and accessibility.
- Automated hands-free development eliminating manual typing and increased Agentic AI platform capacity by 40x.
- 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.

Pre-bunker health communications system
- Developed multi-AI-agents health misinformation prevention system that simulates audience reactions and generates evidence-backed prebunks.
- Built production-ready prototype with comprehensive implementation across 19 versions achieving 65-80% risk reduction.
- Implemented 5-stage processing pipeline: Claim Extraction, Risk Assessment, Audience Simulation, Evidence Validation, Countermeasure Generation.
- 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.

FastAPI Stock Gainers
- Built real-time stock market tracking web application with FastAPI backend and SQLAlchemy ORM supporting async 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.

Resume Coach
- Built full-stack AI-powered serverless web application using OpenAI GPT-4o-mini with LangChain framework.
- Designed serverless AWS architecture with Lambda, API Gateway, DynamoDB, S3, CloudFront.
- Created React 19 + TypeScript frontend with comprehensive CI/CD pipeline using GitHub Actions.
- Deployed production application at coach.aviralgarg.com with custom domain and SSL.
- Implemented session persistence with DynamoDB TTL and contextual follow-up chat system.

EDUCATION

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