Aviral Garg

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

SKILLS

· **Programming & Frameworks:** Python, TypeScript, Kotlin, HTML/CSS, React, Node.js,
· **Machine Learning:** PyTorch, SageMaker, NLP, LLM, RAG, Embeddings, MLOps, Time-Series, Feature Engineering
· **Cloud & Infrastructure:** AWS (CDK, CloudFormation, Step Functions, ECS, DynamoDB, Athena), Azure (Azure Functions, CosmosDB, Blob Storage, Azure DevOps, Cost Management), Firebase, Docker, Serverless Architecture, CI/CD
· **System Design & Architecture:** System Design, Performance Optimization, API Design, Maintainable Testable Code
· **Specialized Technologies:** AR/VR, Windows, macOS, Linux, Automated Windows setup (Chocolatey)

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

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.

EXPERIENCE

Software Development Engineer
Amazon Beauty Tech   February 2021 – March 2025, Vancouver, BC
- Led cross-functional team of 8 engineers to architect serverless ML system processing 40TB daily Amazon catalog data.
- Enabled automated Virtual Try-On discovery and material property extraction scaling beauty product recommendations across millions of customers.
- Built Python-based AI assistant with Slack integration achieving 82% improvement in developer question resolution time.
- Projected 240+ developer-hours monthly savings demonstrating ROI measurement using AI analysis of exported chat logs.
- Spearheaded full-stack builder experience development for Amazon beauty store clients using React and Python.
- Integrated external microservices and A/B testing framework increasing client customization capabilities by 300%.
- Architected automated QBR/MBR reporting pipelines reducing manual reporting time by 90%.
- Achieved 100% stakeholder satisfaction across all reporting consumers through automated system implementation.
- Led organization-wide documentation workshop establishing systematic platform for subject-matter-expert reference.
- Won first place at Amazon 2022 Hackathon with AR iOS makeup-tutorial app leading 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 Intern
T4G Limited   October 2018 – December 2019, Vancouver, BC
- 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.
- Automated extraction of 10 years of version history from 15 applications saving 7 dev hours weekly with Python scripts.
- Designed and implemented Windows-based CI/CD pipelines using Azure DevOps ensuring reliable build and deployment processes.

Software Engineer Intern — VR/AR
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.