

SIMRAT PAL SINGH DHILLON

AI / Machine Learning Developer

Kitchener, ON | 548-577-1772 | simratpalsinghdhillon@gmail.com | linkedin.com/in/simratpalsinghdhillon | github.com/simratdhillon

PROFESSIONAL SUMMARY

Machine Learning Engineer with four years of production Python and cloud engineering experience, currently completing a Postgraduate Certificate in Applied AI Solutions Development at George Brown Polytechnic (GPA 3.75/4.0, Dean's List). Specialized in building end-to-end ML pipelines, deep learning systems, and production ML infrastructure deployed on AWS. Skilled in object-oriented Python development, CI/CD pipelines, and building GenAI and agentic AI systems (LangChain, LangGraph, RAG, MCP). Seeking to bring production engineering discipline to a growing AI Developer team.

CORE COMPETENCIES

- Built production-grade deep learning systems — led FinSense Pro, a four-model federated learning pipeline (BERT, LSTM, Autoencoder, Seq2Seq) for privacy-preserving fraud detection using the Flower framework.
- Four years of professional Python engineering — clean, well-documented, production-ready code across REST APIs, data pipelines, microservices, and cloud-deployed systems at scale.
- AWS certified (Solutions Architect Associate and Cloud Practitioner) with hands-on experience deploying ML models on Lambda, S3, RDS, EC2, ECS, and Kubernetes.
- Strong ML fundamentals — regression, classification, clustering, anomaly detection, feature engineering, model evaluation, and experiment design using PyTorch and scikit-learn.
- Excellent communicator — experienced presenting data findings, ML results, and technical solutions to both engineering teams and non-technical business stakeholders.

TECHNICAL SKILLS

Languages & OOP: Python (4 yrs production), SQL, JavaScript, TypeScript, Java, C++, Bash

GenAI & Agentic AI: LangChain, LangGraph, RAG, pgvector, MCP tool design, OpenAI API, Anthropic API, AWS Bedrock, HuggingFace Transformers, prompt engineering, structured outputs

Cloud & MLOps: AWS (Lambda, S3, RDS, EC2, ECS, API Gateway, CloudFormation — certified), Azure, Databricks (certified), Docker, Kubernetes, Git, CI/CD, Linux

Deep Learning & ML: PyTorch, TensorFlow, scikit-learn, BERT, LSTM, Autoencoders, Seq2Seq, CNNs, computer vision, Federated Learning (Flower), feature engineering, anomaly detection, NLP

Data Science: Pandas, NumPy, EDA, statistical analysis, data visualization, experiment design, A/B testing concepts, PySpark (academic)

Backend & Databases: FastAPI, Django, REST APIs, microservices, asyncio, PostgreSQL (pgvector), MongoDB, MySQL

Visualization: Tableau, Tableau Prep Builder, Power BI, Matplotlib

PROJECTS

FinSense Pro — Canadian Financial Intelligence System

May 2026

PyTorch, BERT, LSTM, Autoencoder, Seq2Seq, Flower (Federated Learning) | Deep Learning I | Project Manager

- Privacy-preserving fraud detection for Canadian SMBs — a four-model pipeline: BERT for financial document understanding, LSTM for historical pattern comparison, Autoencoder for anomaly scoring, Seq2Seq for plain-English explanation generation.
- Federated learning layer using the Flower framework — no raw invoice data leaves client systems.
- Trained on 10,000 synthetic Canadian financial documents with a 10% anomaly rate.

Multimodal LLM Assistant

2026

LangChain, LangGraph, OpenAI API, pgvector, AWS Bedrock

- Production agentic AI system combining RAG-based retrieval, memory, MCP-style tool calling, and structured output parsing to automate complex multi-step workflows across tabular and unstructured data.

- Compared retrieval strategies and embedding models to analyze their effect on end-to-end LLM accuracy.

Additional Projects

- Automated Feature Selection System (Python, scikit-learn) — modular ML evaluation pipeline benchmarking Pearson Correlation, Chi-Square, RFE, L1 regularization, Random Forest importance, and LightGBM.
- Real Estate Housing Price Prediction (Python, scikit-learn, PostgreSQL) — end-to-end regression pipeline with EDA, feature engineering, and model evaluation (MSE, RMSE, cross-validation).

PROFESSIONAL EXPERIENCE

Full-Stack Developer — RV Technologies Softwares Pvt. Ltd.

Feb 2022 – Dec 2022

Python, Django, Angular, MongoDB, MySQL, AWS | India

- Designed and deployed Python data pipelines and backend APIs serving enterprise clients on AWS (Lambda, S3, RDS, EC2, API Gateway), cutting API latency by 40% and operational costs by 30%.
- Delivered EZTRAK — a multi-tenant SaaS platform with hybrid MongoDB and MySQL data architecture, analytics reporting dashboards, and CI/CD pipelines reducing deployment time by 50%.
- Orchestrated microservices on AWS ECS and Kubernetes enabling horizontal scaling under load.

Web Developer — The Traffic Solutions Company

Oct 2018 – Feb 2022

Python, Django, REST APIs, AWS | India

- Built data-driven applications and analytics reporting interfaces for logistics clients, increasing data processing speed by 45% and reducing error rates by 50%.
- Automated AWS infrastructure deployment and documented system design decisions for cross-functional teams and non-technical stakeholders.

Amazon Delivery Driver (DSP) — OLSI

Aug 2023 – Present

Amazon Delivery Service Partner | Kitchener, ON

- Complete approximately 160 stops and 300 packages per shift, coordinating with dispatch in real time and using Amazon's logistics and routing data platform daily.

EDUCATION

Postgraduate Certificate, Applied AI Solutions Development

Jan 2026 – Dec 2026

George Brown Polytechnic | GPA: 3.75/4.0, Dean's List

- Coursework: Machine Learning I & II (A, A+), Deep Learning I & II, Applied Math for ML/Deep Learning, Big Data Tools I & II, Ethics & Law for Data Science (A+), Data Visualization (A-), Full Stack Data Science Systems.
- Academic coursework complete; remaining requirement is a 4-month co-op term (graduation requirement).

Bachelor of Technology, Information Technology

2014 – 2018

Guru Nanak Dev Engineering College, Ludhiana, India

- Industrial Training: SmartWiz Technologies — Android Development (6 months, Mohali, India); C-DAC — Java Technologies (6 weeks, Mohali, India).

CERTIFICATIONS

- AWS Certified Solutions Architect – Associate (Jul 2024–Jul 2027) | AWS Certified Cloud Practitioner (May 2024–Jul 2027)
- Databricks Accredited: Databricks Fundamentals & AI Agent Fundamentals (May 2026)
- DeepLearning.AI Deep Learning Professional Certificate, Andrew Ng (Sept 2026) | IBM Enterprise Design Thinking Practitioner (Apr 2026)

ADDITIONAL INFORMATION

Languages: English (Fluent), Punjabi (Native), Hindi (Fluent) | Status: Canadian Permanent Resident, fully authorized to work in Canada without restrictions | Availability: Immediate for a 4-month co-op or full-time role, open to all Canadian cities and remote/hybrid.