

# Akshat Sharma

✉ akshat.vhs@gmail.com

☎ +1 639 554 4090

📍 Regina, SK

🌐 LinkedIn

🔗 <https://akshat-sharma.com>

🐙 GitHub

## Professional Summary

AI/ML Software Engineer and Researcher with 4+ years of experience designing and deploying production AI systems across LLMs, RAG, computer vision, and full-stack applications. MSc in Computer Science from the University of Regina with published research in continual federated learning and AI-driven systems. Proven experience leading AI solutions from research and prototyping to scalable production deployment.

## Work Experience

### Lead AI and Full Stack Developer – Polymath Global

01/2025 – 05/2026 | Regina, Canada

- Led development of a multi-agent knowledge assistant with multi-tier RAG retrieval, improving accuracy 3–4× and achieving sub-1.5 second response latency.
- Designed and shipped a privacy-first clinical AI platform used for real patient workflows, combining local LLM inference, RAG, and secure on-prem FastAPI backend.
- Improved retrieval speed 3× and reduced hallucinations 70–80% via SQL optimizations, tier bias and strict grounding.
- Ensured data privacy with strict user context isolation, encrypted storage, role-based API access, and offline model execution, emphasizing data governance and privacy principles.

### Research Intern – Ericsson Global R&D

12/2022 – 07/2023 | India

- Designed a practical thresholding method for KPI anomaly detection on telecom data; reduced noisy alerts while keeping real issues visible.
- Built data pipelines and evaluation scripts; compared classic ML vs DL methods with clear visual summaries.

### Research Intern – Mitacs Globalinks

05/2022 – 08/2022 | India

- Implemented federated learning from scratch on image based datasets; compared methods and metrics across continual-learning add-ons (EWC, LwF).
- Documented experiments and ablations; suggested directions for scale and communication efficiency.

### Research Intern – Samsung

01/2021 – 01/2022 | India

- Prototyped monocular depth estimation tailored for mobile devices; earned a Certificate of Excellence.
- Explored model size/accuracy trade-offs for on-device constraints.

### Undergraduate Researcher – ASTAR

09/2020 – 01/2022 | Singapore

- Studied continual learning methods (EWC, LwF) and their stability-plasticity trade-offs; supported experiment design and analysis.

## Education

### University of Regina – Regina, Canada

12/2025

Master of Science in Computer Science

Coursework and research focused on Machine Learning, Federated Learning, Deep Learning, AI systems, and applied research. Published 2 novel works in continual federated learning and AI-driven systems.

### Vellore Institute of Technology (VIT) Chennai – Chennai, India

07/2023

Bachelor of Technology in Computer Science (AI & ML)

Specialized in Artificial Intelligence and Machine Learning with coursework in data structures, algorithms, machine learning, deep learning, databases, and software engineering.

## Skills

**Languages:** Python, JavaScript, TypeScript, SQL, Java, C/C++, HTML/CSS

**Frameworks:** FastAPI, React, Next.js, React Native, Node.js, GraphQL

**AI/ML:** PyTorch, TensorFlow, Hugging Face, RAG & Vector Search, Federated Learning, Quantization, Transformers, FAISS, LangChain, Computer Vision

**Data & Infrastructure:** PostgreSQL, Redis, Docker, Kubernetes, AWS, CI/CD, REST APIs, Supabase, MinIO, SQLite, Git

# Projects

---

## Offline Clinical Assistant with Local LLM + RAG

- Built a fully offline medical assistant using quantized LLaMA, FAISS/BM25 retrieval, and structured SOAP-note generation designed for privacy-preserving clinical workflows, leveraging FastAPI backend development and vector databases.

## Continual Federated Learning with GAN-Based Replay (Thesis + ICMLA 2025)

- Designed a generative-replay + EWC algorithm enabling long-horizon continual learning in federated systems; delivered strong stability-plasticity performance across incremental tasks, leading to acceptance at IEEE ICMLA 2025, with MLflow experiment tracking.

## KPI Anomaly Detection (COMSNETS 2024)

- Designed an adaptive thresholding method for telecom KPI anomaly detection reducing noisy alerts while preserving real faults, utilizing MLflow experiment tracking and agile methodology.

## Skin Lesion / Dermatology AI Assistant - under Patent/IP review

- Built a novel computer vision-based clinical triage system for skin lesion analysis using deep learning models, image preprocessing, risk scoring, and clinician-facing workflow integration.

## Multi-Agent Simulation System (Startup Pack, Research Pack, Novel Pack)

- Built a Next.js + FastAPI multi-agent orchestration system with hierarchical memory, vector search, streaming LLM responses, and CI/CD deployment, enabling collaborative AI-driven document and workflow generation.

## AI-Powered Algorithmic Trading Engine

- Engineered a modular real-time trading system with candle ingestion, strategy execution, portfolio tracking, and broker API integration for automated paper trading and risk-controlled signal deployment.

# Publications

---

- **Adaptive Thresholding Heuristic for KPI Anomaly Detection** – IEEE COMSNETS 2024, pp. 737–741.
- **Continual Federated Learning for Dynamic Data Environments** – IEEE PACRIM 2024, pp. 1–6.
- **Better Continual Federated Learning using Generative Adversarial Networks** – IEEE ICMLA 2025.

# Live Projects

---

**Dermascribe** – <https://www.dermascribe.ca/> | <https://info.dermascribe.ca/>

AI-powered clinical decision support platform for skin lesion triage, clinician documentation, and referral workflows using computer vision and LLMs.

**DoorCrew** – <https://www.doorcrew.ca/>

On-demand home services marketplace connecting customers with local professionals through real-time booking and job management.

**DexNest** – <https://github.com/Akshat978/DexNest>

Open-source offline-first productivity platform with local AI assistant, file transfer, calendar, finance, clipboard, and developer tools.