MITCHELL CHATTERJEE

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SUMMARY

Machine Learning Engineer experienced in building real-time, production-grade NLP, retrieval, and agentic systems. Skilled in foundation model development, from data pipelines to LLM orchestration and evaluation. Adept at bridging research and engineering to deliver scalable, high-impact AI solutions.

EXPERIENCE

AI / Machine Learning Engineer Jan 2024 – Present
JSI, Ottawa, Ontario — *Provider of digital intelligence solutions used by law enforcement and intelligence agencies.*

- Led the migration from a proprietary orchestration framework to Agno/LangChain, enabling a modular, LLM-based agentic retrieval and summarization system integrated with MCP; deployed on-premises across customer sites with 100+ GPUs.
- Built a real-time RAG pipeline to embed and retrieve billions of multimodal records (audio, text, image), significantly improving search latency and contextual relevance.
- Spearheaded development of the company-wide evaluation framework, leveraging DeepEval and A/B testing to rigorously measure KPIs, including relevance, latency, and interaction quality — enabling continuous feature improvement.

Junior AI / Machine Learning Engineer May 2019 – Sep 2022
JSI, Ottawa, Ontario

- Designed and deployed a real-time threat detection system that scanned high-volume multimodal data streams — including audio, text, images, and video — to detect and alert on high-risk activity using anomaly detection and proprietary ML models.
- Proposed and implemented a scalable, Kafka-based event-driven architecture for time-sensitive alerting workflows, reducing end-to-end notification latency by 33%.

EDUCATION

Master of Computer Science (Thesis), Machine Learning Sep 2022 – Sep 2024
Carleton University, Ottawa, ON

- GPA: 4.0 / 4.0 (Equivalent to 98.3%)
- Thesis: *Toward Robust Automated Cardiovascular Arrhythmia Detection using Self-supervised Learning and 1D Vision Transformers*
- Courses: Advanced Machine Learning, Natural Language Processing, Deep/Reinforcement Learning

Honours Bachelor of Computer Science, AI Specialization Sep 2016 – Dec 2020
University of Ottawa, Ottawa, ON

- GPA: 4.0 / 4.0 (Equivalent to 91%) — *summa cum laude*

TECHNICAL STRENGTHS

Machine Learning:	Transformers / CNNs / RNNs	Time-Series / Healthcare Data
	PyTorch / NumPy / Pandas	NLP / Docker / Kubernetes
	HPC / RAG / FAISS	DeepEval / Agno / MCP
Programming:	Python / C# / JavaScript	SQL / Java / C/C++