

Adam Kamel

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EDUCATION

University of Waterloo

Bachelor of Software Engineering

President's Scholarship of Distinction Recipient, 2026

Waterloo, ON

GPA: 3.98/4.00

TECHNICAL SKILLS

Languages: Python, C/C++, SQL, Javascript, HTML/CSS

Frameworks and Libraries: PyTorch, Numpy, Pandas, FastAPI, Langchain, Scikit-Learn, PyTest, Next.js, Matplotlib

Developer Tools: Git, Linux, Docker, VS Code, Postman, Huggingface

EXPERIENCE

Machine Learning Engineer

Dec 2025 – Present

WatStreet - Design Team

Waterloo, ON

- Built unsupervised learning pipelines with **K-Means and Hidden Markov Models** for **time-series analysis**
- Benchmarked model outputs against market events, achieving **85% agreement** with research-backed heuristics

AI Researcher

May 2025 – Sep. 2025

AlgoVerse

Remote

- Authored peer-reviewed paper on **LLM interpretability** accepted at **NEURIPS and EMNLP** workshops
- Developed **Monte Carlo simulation pipeline** generating **3M+ games** realistic poker games for LLM training
- Built an interpretability pipeline probing LLM activations, training MLP probes that achieved **98% accuracy on hand-rank prediction** and showed early-layer specialization for deterministic & stochastic signals

Software Engineering Intern

May 2025 – Sep. 2025

Lynkr

Toronto, ON

- Authored **Langchain** cookbooks demonstrating **10+ unique AI agent workflows** improving client adoption
- Implemented multi-step vector search, mapping natural language to endpoints, improving search accuracy by **28%**
- Developed integrations for **30+ external service endpoints using FastAPI** and test cases for **200+ integrated endpoints using PyTest**, ensuring reliability of service connections

PUBLICATIONS

- Adam Kamel et al. *Emergent World Beliefs: Exploring Transformers in Stochastic Games*. Accepted at NeurIPS 2025 Mechanistic Interpretability Workshop; EMNLP 2025 BlackboxNLP Workshop, 2025. arXiv:2512.23722. <https://arxiv.org/abs/2512.23722>

PROJECTS

Pufferfish Chess Engine - ChessHacks 3rd Overall | *Python, Pytorch, Huggingface*

- Built a full chess engine with optimized search **generating moves in <1s** at tournament time controls
- Designed and integrated a neural network position evaluator, generating encoded board features for **150M+ positions** to train a **PyTorch MLP**, and implementing low latency inferencing into the search loop
- Engineered a high-throughput data pipeline for position parsing and feature extraction (**50k+ positions/s**)

GooseMarket Prediction Market | *Python, Flask, SQL, Supabase, Git*

- Built a uWaterloo exclusive prediction market with a **Flask + Supabase backend** and internal currency
- Implemented a liquidity-sensitive automated market maker (AMM) with **dynamic volume scaling** that **returns O(1) quotes**, providing liquidity and allowing users to trade instantly without a traditional orderbook
- Built a complete trade and accounting pipeline with balance and limit checks and comprehensive price logging, and a portfolio/PnL service that **aggregates trades and metrics in a single Supabase & AMM call**

SpeedShield | *Python, Scikit-Learn, Git*

- Developed **ML model using Scikit-Learn** to find optimal speed camera placement locations in Toronto
- Engineered a training dataset with custom features** computed from six open Toronto traffic datasets
- Achieved an **accuracy of 95%** on validation set of existing cameras, showing alignment with existing placements
- Created informative visualizations and an interactive frontend with React to display results to stakeholders