

Nathan El-Khoury

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EDUCATION

Carleton University, Honours BCS. of Computer Science; AI & ML Stream

April 2026

GPA: 3.97/4.0

EXPERIENCE

AI Engineer

Feb 2026 - Present

J-Squared Technologies - FALC AI Team

Python, LangGraph, FastAPI, Next.js, Postgres

- Built and shipped an internal agentic platform used across teams to run complex multi-agent workflows, with typed agent contracts, per-agent MCP scope enforcement, budget + access guardrails, and a two-tier kill switch
- Eliminated data loss on mid-run failures by designing durable workflow orchestration with crash-safe checkpointing and human-in-the-loop interrupts, so runs resume exactly where they left off after hub restarts
- Cut candidate screening from days to minutes and saved recruiters hours per role with a production AI system that has ranked 2000+ resumes via a novel two-track engine combining LLM keyword confidence scoring with qualitative evaluation

Software Engineer Intern

May 2025 - August 2025

Trend AI - Reports Team

Python, FastAPI, LangGraph, MCP

- Led development of a multi-agent LLM compliance system converting natural language queries into on-demand visual reports for enterprise customers, cutting delivery time from weeks to under 30s
- Autonomously resolved 90% of user queries by orchestrating a LangGraph workflow spanning NLP, MCP-based data retrieval across 4 servers and 60 APIs, and LLM-driven visualization with auto-generated PDF output
- Ingested raw JSON into an in-memory relational database with Pandas and SQL, enabling an LLM-SQL agent to fetch visualization data in under 4s and reduce context windows by 80%

Machine Learning Engineer Intern

May 2024 - May 2025

J-Squared Technologies - FALC AI Team

Python, PyTorch, TypeScript, Next.js, NestJS

- Secured \$100k+ in contracts through live conference demos of a CNN-LSTM rockfall classification system achieving 92% accuracy under varying environmental conditions, built end-to-end from ETL pipeline to deployed model
- Boosted model accuracy 25% and cut false positives 30% by building a Python synthetic data generation framework that expanded training data variety for the computer vision team

Software Engineer Intern

Sept 2023 - Dec 2023

Apption Software - Datahunter AI Team

C#, Python, Blazor

- Architected the Datahunter Query Language using a command-pattern backend integrated into the Blazor frontend, accelerating user query resolution time by 200%
- Boosted enterprise document processing throughput 5x by implementing NLP-driven keyword extraction with TF-IDF and word co-occurrence analysis

Software Engineer Intern

May 2023 - Aug 2023

Starvoy Technologies - Hardware Team

Python, C++, TypeScript

- Achieved 98% accuracy and cut manual QA time 30% by developing an SVM-based anomaly detection system with k-fold cross-validation for optical transceiver testing
- Saved 15 engineering hours/week by automating optical transceiver report generation with LLM pipelines, replacing a manual reporting workflow

PROJECTS

Machine Learning UFC Predictor [GitHub] | *Pandas, Scikit-learn, SQL, Flask, ReactJS*

- Engineered features and trained an ensemble ML model (XGBoost + Logistic Regression) on historical fight data, deployed via ReactJS + Flask for real-time predictions at 86% accuracy

Computer Vision Poker Game Theory Optimizer [GitHub] | *Python, Ultralytics, Supervision, OpenCV*

- Built a YOLOv8 + ByteTrack card tracking pipeline streaming detections into Monte Carlo simulations to compute win odds and recommend optimal moves (fold / call / raise)

SKILLS

Languages: Python, TypeScript, C++, C#, Java, SQL, Bash, HTML, CSS

AI / ML: LangGraph, LangChain, PyTorch, TensorFlow, Scikit-learn, OpenAI API, MCP, Pydantic, Pandas, NumPy

Frameworks / Infra: FastAPI, Flask, NestJS, Next.js, Node.js, .NET, PostgreSQL, MongoDB, FAISS, Docker, Kubernetes, AWS, Linux