Adam Abdalla

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EDUCATION

University of Toronto Sept. 2024 - May 2028

Bachelor's, Computer Engineering, Minor in Engineering Business and AI *Toronto, ON*

- **GPA:** 3.8 | President's Scholar Recipient ($20 000 merit-based).
- **Coursework:** Calculus, Computer Fundamentals, Linear Algebra, Data Structures and Algorithms, Computer Architecture.

EXPERIENCE

Software Engineering Intern May 2025 – Sept. 2025

Data Passports *Toronto, ON*

- Launched **LLAMA**-based **Python Privacy Advisor Agent** using **LangChain**, sustaining **150+ req/s** for over **10,000** users.
- Containerized and deployed **Privacy Advisor Agent** on **Azure VM** with **Docker** and **CI/CD**, using blue-green releases and health checks to keep **sub-second p95** latency and enable **zero-downtime** rollouts.
- Implemented **RAG** pipeline to automate GDPR and CCPA compliance DSAR (Data Subject Access Request) generation through **Privacy Advisor Agent**, cutting average request time from **30 mins** to **4 secs** and raising submission volume **8-fold**.
- Implemented data-protection guardrails with **PII redaction**, least-privilege **Role Based Access Control**, and **Azure Monitor** alerts, maintaining **100 percent** compliance and **0** security incidents through **10,000** production runs.

Software Engineering Intern Apr. 2025 – Sept. 2025

FI Solutions *Toronto, ON*

- Owned a customer-facing Data Maturity Assessment platform (**Next.js** + **SQL**) that cut audit turnaround from days to **sub-10** minutes for **30+** enterprise clients, resulting in **35%** higher weekly active users.
- Designed & shipped an **ACID-compliant REST API** handling **500** survey transactions/sec with **0** data-loss incidents.

Software Engineering Intern Sept. 2024 – May 2025

University of Toronto Robotics Association *Toronto, ON*

- Developed decision-making code in **Python**, enabling attacking and defending behaviors in autonomous soccer-playing robots.
- Containerized **ROS-based** localization systems using **Docker**, cutting team-wide deployment and debugging times by **40%**.
- Fine-tuned **YOLOv5 Computer Vision** Model in **Pytorch**, using custom datasets via **CUDA** to accurately identify objects, achieving a **20%** mAP boost compared to initial models.

PROJECTS

Self-Hosted Local LLM Dev Platform | *FastAPI, Transformers, Qdrant, Docker*

- Re-engineered **OpenAI's** chat **API** for offline use on **consumer hardware** (Ryzen 7 2700 / GTX 1660), streaming **25 tokens/s** from **quantized 7B Llama model** and eliminating **all external-API costs**.
- Developed a **JSON-Schema** based **function-calling** engine that validates **LLM** outputs, executes **Python** tools, and loops results back to the model, achieving **100%** successful calls in **1,000+** automated tests.
- Enabled **RAG (retrieval-augmented generation)** by integrating an embeddings endpoint **(Jina AI base)** + **Qdrant** vector search, delivering a **92%** factual accuracy on a **500-question** custom KB benchmark.

Gen-AI Website Cloner | *Next.js / TypeScript, FastAPI, Vercel + Render*

- Engineered a **GenAI pipeline** that recreates any public website in $<$**15s**, streaming DOM/CSS to a **200 K-token LLM** and eliminating **95%** of manual front-end rebuild effort.
- Built a dual-mode scraper (**HTTP** + **stealth Playwright**) that bypasses CAPTCHAs and **JS obfuscation**, achieving **98% successful captures** across **50 test sites**.
- Implemented a modular **LLM orchestration layer** with **Claude 4 Sonnet**, enabling prompt chaining to extract clean semantic structure from noisy **DOMs** and generalize layouts across diverse website architectures.
- Architected a lightweight deployment pipeline with a **serverless frontend** on **Vercel** and containerized backend on **Render**, cutting cold-start latency by **35%** and reducing deployment overhead to under **1 minute**.

Semantic Similarity Engine | *Python, Semantic Descriptors, Cosine Similarity*

- Engineered an **NLP** pipeline to tokenize and normalize **1M+** words from classic literature, generating **300K+** semantic descriptors, and leveraging **cosine similarity** to classify synonym pairs with **72%** accuracy on **TOEFL-style** benchmarks.

CERTIFICATIONS & SKILLS

Languages: C++, C, Python, C#, JavaScript/TypeScript, Java, SQL
Tools & Skills: Linux/Unix, CUDA, AWS, Azure, TensorFlow, PyTorch, FastAPI, scikit-learn, Docker, DevOps, Git, Qdrant, CI/CD
Certifications: Microsoft Certified: Azure Fundamentals (AZ-900)