Abdelrahman Elshrief

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EDUCATION

University of Toronto   Toronto, ON
Bachelor of Science in Computer Engineering + PEY Co-op   *Sep 2025 – Present*

EXPERIENCE

MCP Gateway Developer   Dec 2025 – Present
UTMIST x Agentiiv   *Toronto, ON*
- Architected a FastAPI backend for an MCP Gateway, implementing deterministic routing across **5+ MCP connectors (e.g Google Drive)** to validate multi-agent interoperability.
- Secured agent communication via **RBAC and JWT validation**, establishing enterprise-grade authorization for **granular permission control**.
- Deployed **Dockerized environments** with **Prometheus & Grafana** monitoring to visualize system health and reduce deployment latency.

AI Quality Assurance & Prompt Engineer   Nov 2024 – Present
Stellar AI   *Toronto, ON*
- Conducted **Prompt Engineering** and **Rubric development & evaluation** to challenge AI programming models.
- Executed QA on large-scale datasets, correcting automated labeling errors to ensure high-fidelity training data for engineering teams.
- Generated **100+ edge-case datasets** adhering to complex annotation protocols, directly supporting model fine-tuning.

Developer   Aug 2022 – Aug 2023
PayBridge Technologies   *Kingston, ON*
- Led full-cycle development of a fintech platform using **Next.js and Python**, **containerized via Docker** for scalable external deployment.
- Engineered cross-platform API integrations (Venmo, PayPal) to process **$3,500+ in transactions** for **100+ beta users**.
- Managed **AWS** cloud infrastructure and domain security, **decreasing downtime by 90%** and ensuring data protection for financial transactions.

PROJECTS

Twin - MakeUofT 1st Place Overall | *Python, C++, Raspberry Pi, Arduino, Computer Vision*
- **Engineered an AI-driven wearable** on a hybrid Raspberry Pi/Arduino architecture, **winning 1st Place Overall** out of **300 participants** for its integration of real-time biometrics and computer vision
- **Reduced agent response latency by 80%** by transitioning from full-frame image transmission to a localized **YOLO-v8** bounding box metadata pipeline.
- **Architected serial communication protocol** between the Pi and Arduino, resolving asynchronous baud rate mismatches **ensuring 99.9% data integrity** for critical heart rate and environmental sensor feeds.

NLP Resume Scorer | *Python, PyTorch, Sentence Transformers, scikit-learn, Gemini API*
- Engineered NLP pipeline combining **TF-IDF** and **semantic embeddings (all-MiniLM-L6-v2)** to score resumes against job descriptions.
- Implemented cosine similarity and iterative weight tuning, **improving accuracy from 24% to 64%**.
- Integrated **Gemini API**, generating actionable resume suggestions improving resume scores consistently by **10%**.

The Underrated Baller | *AstroJS, Tailwind CSS, TinaCMS, Netlify*
- **Founded a media brand** garnering **30,000+ views** across social platforms; applied first-hand insights to engineer a high-performance web platform tailored for audience engagement
- **Integrated headless CMS**, creating a "no-code" publishing workflow reducing blog post creation time by **75%**.
- Built a CI/CD pipeline via **Netlify** for **instantaneous site rebuilds** and form collection, ensuring scalablity

TECHNICAL SKILLS

Languages: Python, JavaScript/TypeScript, C, C++, SQL
Web & Infrastructure: React, Next.js, AstroJS, Node.js, Tailwind CSS, Docker, AWS, GCP, Netlify, Linux
AI & Data Science: PyTorch, Sentence Transformers, Pandas, RAG, Scikit-learn, Gemini API, LLMs, Gen AI
Tools: Git, GitHub Copilot, MongoDB, Figma, Unity, Jira