Ashkan Khademi

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EDUCATION

Toronto Metropolitan University — Toronto, ON
Master of Engineering in Electrical and Computer Engineering (AI Specialization) — *September 2025 – August 2026*

York University — Toronto, ON
Bachelor of Science in Computer Science — *September 2020 – December 2024*
- Courses: Advanced Object-Oriented Programming (Java), Computer Organization, Introduction to Database Systems, Fundamentals of Data Structure, Operating System Fundamentals, Software Design

TECHNICAL SKILLS

Languages: Java, Python, JavaScript, HTML, CSS, SQL, C
Frameworks/Libraries: React.js, Node.js, Express.js, Spring, jQuery, EJS, JUnit, Pandas, NumPy, Scapy, Axios
Tools/Technologies: Git, Docker, MongoDB, PostgreSQL, REST APIs, VS Code, Agile

WORK EXPERIENCE

Software Engineer Intern — December 2025 – Present
TranQuility Inc. — *Toronto, ON*
- Built REST APIs integrating a 7-agent LangGraph workflow with synchronous and SSE streaming responses.
- Applied LLM-based fact extraction to persist cross-session semantic memory in Qdrant and chats in Supabase.
- Collaborated with the engineering team to fix memory-write failures and stabilize background streaming for demos.

Software Developer Intern — February 2025 – September 2025
ReliablyME Inc. — *Toronto, ON*
- Created a Python-based cohort projection model using Pandas and NumPy to forecast revenue growth, churn, and conversion across subscription plans.
- Engineered a cohort tracking system to monitor customer transitions across 4 plan tiers, improving retention visibility and enabling monthly CAC and churn reporting.
- Devised models to simulate 48-month trends and forecast churn, MRR, and retention from cohort data.

RESEARCH EXPERIENCE

Cybersecurity and DPI Anomaly Detection — September 2024 – December 2024
York University — *Toronto, ON*
- Researched real-time anomaly detection with Beta-VAE and Suricata, improving detection from 0.1% to 77.8%.
- Designed an AI-driven intrusion detection system, analyzing 50,000+ network packets for suspicious activity.
- Integrated live packet monitoring with Scapy, enabling real-time analysis of encrypted and unencrypted traffic.

PROJECTS

AskMyPDF (Python, Streamlit, Sentence-Transformers, NLP)
- Crafted an AI chatbot to extract answers from uploaded PDFs using embeddings, reducing false matches by 80%.
- Processed and indexed 250+ text chunks per document with PyMuPDF and Sentence-Transformer models.
- Enabled uploads of PDF files up to 100 MB with Streamlit, ensuring interactive sub-second response times.

RTSP Client (Java, Sockets, Networking)
- Refined a Java RTSP client for MJPEG streaming over UDP/TCP, improving playback stability at 25 fps.
- Implemented three RTSP features (SETUP, PLAY, PAUSE) for real-time video control and smooth streaming.
- Optimized frame buffering logic to reduce delays and handle out-of-order packet delivery.

VOLUNTEERING EXPERIENCES

CJT Organization — October 2025 – Present
- Constructed a CodeIgniter (PHP) CRUD app with database persistence for managing library book records.
- Developed validation for 3 required fields and implemented save, update, and delete confirmation flows.
- Refined Docker-based local setup and documented run steps, then began fixing tickets in the CJT portal.

Canada Learning Code — September 2023 – August 2024
- Volunteering as a mentor with Canada Learning Code, part of a program with 11,000 events and 977,000 learners.
- Mentored 4–5 learners in Python and web development, providing support during live coding and Q&A sessions.