

Sarah Khan

s64khan@uwaterloo.ca | **Systems Design Engineering** | 519-573-1606

[LinkedIn](#) — [GitHub](#) — [Website](#)

TECHNICAL SKILLS

Languages: Python, Java, C/C++, SQL (PostgreSQL), JavaScript, HTML/CSS

Frameworks & Tools: GitHub Copilot, Claude Code, Snowflake, Databricks, AWS, React, OpenAI API, Docker, Kubernetes

ML/Data: AI/ML: LLMs (GPT, Llama, RAG), scikit-learn, TensorFlow, NLP, feature engineering

EDUCATION

University of Waterloo

Waterloo, ON

Bachelor of Applied Science, Systems Design Engineering

Sept. 2023 – Current

- President's Scholarship of Distinction (Admission Average of 95)

EXPERIENCE

Software Engineer (AI/ML)

May 2026 – August 2026

Ericsson

Seattle, WA

- Built Python **agentic** workflows, decomposing network requests into multi-step internal API calls, automating test cases
- Engineered PySpark **pipelines** processing **2 TB/day** of telemetry into LLM feature tables, cutting runtime **20%**
- Deployed a retrieval-grounded LLM assistant with a golden-set eval harness, improving response accuracy 60% to **80%**
- Built a cost-monitoring anomaly detection service (Python, SQL, scikit-learn), reducing manual review by **35%**

Machine Learning Engineer

January 2026 – April 2026

Cineplex

Toronto, ON

- Built forecasting pipelines with **Databricks**, PySpark, **Microsoft Azure** for **170+** theatres, saving **\$110K** annually
- Automated scheduling optimization workflows, delivering **\$150K** in annual cost savings through predictive modeling
- Created data ingestion pipelines (YouTube, Wiki, MXF) in **Azure Databricks**, transforming datasets in **ADLS**
- Generating Databricks **visualizations** and **Power BI** dashboards while updating demand analysis reports at large scale

Machine Learning Engineer

May 2025 – August 2025

The Globe and Mail

Toronto, ON

- Built news scraping and data pipeline models using **Snowflake**, **Databricks**, **AWS** for **21.2M** monthly user platform
- Designed & **trained** LLM-powered recommendation model offers to **500K+** users, boosting subscription revenue
- Developed AI agent using **LangChain**, **n8n** to streamline journalist workflows, optimizing **P95 response latency** 15%
- SQL segmentation and ETL pipelines (**AWS S3**, **Databricks**, **Snowflake**) with sentiment analysis, and visualizations

AI/ML Engineer

September 2024 – December 2024

SickKids Hospital

Toronto, ON

- Trained **deep learning** + **sci-kit learn** analyzing medical data, optimizing end-to-end predictive diagnostics extraction
- Used **Pytorch** and **Bayesian Neural Networks (BNNs)** to achieve spine model prediction for spine surgery
- Built **Python** script to process CT scans and output estimated rod length for scoliosis surgery, **automating** calculations

Software Engineer

January 2024 – April 2024

Eon Media

Toronto, ON

- Created **scalable pipelines** for large media datasets, segmented data to **train AI** model, maximizing **ROI** factor
- Built **automation** testing tool with Selenium and Python Requests, reducing manual testing by **40 hours monthly**
- **Enhanced AI** image detection accuracy by **13%** using Roboflow, improving client and stakeholder satisfaction

PROJECTS

Formula 1 Grand Prix Winner Predictive Model | *Python, Pandas, Numpy, scikitlearn*

June 2025

- ML pipeline predicting 2025 winners, using race results, qualifying, circuits, weather, driver/team performance metrics.
- Trained and evaluated ranking and classification models (gradient boosting, logistic baselines) with cross-validation

Portfolio Website | *React, HTML, CSS, JavaScript*

April 2024

- Designed and developed a personal portfolio website to showcase past projects, technical skills, and achievements
- Built responsive front-end components with React and CSS, optimizing user experience across devices

Girls in STEM Olympics Competition | *Mississauga, ON – Theory6 Robotics*

November 2021

- Awarded Judges' Award (2021) and 4th place (2020) out of 60 participants, with judges from Microsoft and Quanser
- 2-day competition creating solutions for real-world mechanical, electrical, and software design problems