

# Soroosh Sorkhani

🌐 sorooshsorkhani.github.io

✉ soroosh.sorkhani@gmail.com

🌐 sorooshsorkhani 🎓 Google Scholar 🌐 soroosh-sorkhani

📍 Toronto

## SUMMARY

- AI specialist with 6+ years of experience in machine learning, LLMs, and computer vision. Skilled in developing and deploying AI solutions, from generative AI applications to real-time computer vision systems. Proven track record of building scalable, high-impact models for diverse industries.

## SKILLS

- **Programming:** Python, R, SQL, NoSQL
- **Libraries & Frameworks:** LangChain, scikit-learn, TensorFlow, Pytorch, L2R, Pandas, NumPy
- **ML & AI:** LLMs, Computer Vision, NLP, Deep Learning, Time Series, Graph Analysis
- **Systems & tools:** Unix/Linux, NVIDIA Jetson Nano, AWS

## EXPERIENCE

- **McGill University** Montreal, Canada  
Sep 2024 - Present  
Data Scientist, AI Engineer  
Developed an AI assistant to assist 3,500+ members of GEO BON, a global network of biodiversity researchers spanning 152 countries and 2,000 organizations. The **RAG-powered agent** generates responses by leveraging open-source LLMs such as **Llama** and **DeepSeek**, offering capabilities ranging from coding and statistical data analysis to delivering reference-backed, reliable, and actionable solutions for real-world applications.
- **York University** Toronto, Canada  
Jun 2023 - Sep 2024  
Data Scientist, Computer Vision Engineer  
Developed computer vision systems to address urban mobility challenges. Built a **Smart City Signals** system using **YOLOv8** for real-time traffic analysis at intersections, achieving **0 error** in lane-wise vehicle and pedestrian detection while estimating speed and waiting times for deeper insights. Developed a parking lot occupancy detection system, utilizing YOLOv8 for vehicle detection. Led the design and deployment of an on-street parking detection system, utilizing GPS data and dashboard camera feeds to identify parked vehicles, enhancing parking management and enforcement strategies. Additionally, implemented machine learning models, including XGBoost, to predict parking violations across a network of 940 parking locations in Downtown Toronto. The model effectively predicted the number of violations for given location-time instances, with a **Mean Absolute Error (MAE) of 1.3**. (See a live demo on my website)
- **Canadian Tire Corporation** Toronto, Canada  
Sep 2021 - Sep 2022  
Data Analyst  
Managed and optimized databases using SQL, creating reports and dashboards with actionable insights for stakeholders. Performed statistical analyses, including **A/B testing**, to compare two different transportation methods. Led the enhancement of a data-driven report encompassing over 5000 daily records on transportation equipment repairs. Achieved operational efficiency by integrating data from multiple databases and automating processes using Python, reducing daily processing time by 50%.
- **Toronto Transit Commission (TTC)** Toronto, Canada  
Jan 2021 - Jun 2021  
Machine Learning Consultant  
Assessed the end-to-end process of a machine learning product for TTC to Improve real-time passenger count predictions at subway stations. Conducted a thorough review of the product pipeline, identifying issues in data collection, validation, and evaluation. Provided actionable recommendations to optimize data sourcing, model development, and evaluation processes. Proposed four potential solutions, including feature engineering and advanced time series models such as RNN and LSTM, to improve the overall performance and reliability of the model.
- **Toronto Metropolitan University** Toronto, Canada  
Sep 2019 - Jun 2021  
Data Scientist  
Built an expert **recommendation system** for Q&A platforms, including Stack Overflow. Engineered 74 features using methods like **LDA topic modeling**, **text similarity**, and **graph embedding**. Proposed a **random forest learning to rank** approach that achieved a 16.41% improvement in NDCG@10 over the state-of-the-art model across datasets from five websites, with over 15,000 users and 21,000 questions. Analyzed key features to understand their impact on model performance.
- **DeepLearning.AI** Online  
Jun 2022 - May 2023  
Deep Learning Specialization on Coursera  
**Courses:** Neural Networks and Deep Learning, Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization, Structuring Machine Learning Projects, Convolutional Neural Networks, Sequence Models
- **Toronto Metropolitan University** Toronto, Canada  
Sep 2019 - Jun 2021  
Master of Science in Electrical and Computer Engineering  
**Thesis:** Feature-based Question Routing in Community Question Answering Platforms

## PUBLICATIONS

- Sorkhani, S., Etemadi, R., Bigdeli, A., Zihayat, M., & Bagheri, E. (2022). Feature-based Question Routing in Community Question Answering Platforms. *Information Sciences*