

NABILA ABRAHAM

📍 Location: Toronto, ON, Canada • ✉ Email: nabila.abraham@gmail.com • 📞 Phone: (647) 825-2599

🌐 <https://www.linkedin.com/in/nabilaabraham/> 📄 <https://github.com/nabsabraham>

🌐 <https://www.nabilaabraham.com/> 📖 <https://nabila-abraham.medium.com/>

🔗 SKILLS

- **Machine Learning:** Deep learning (PyTorch, Keras, DGL, Pytorch-Geometric), NLP (nltk, spacy, HuggingFace)
- **Analytics:** Python (Pandas, NumPy, Scikit-Learn, SciPy, Django, Flask), SQL, Bash (Shell), Spark
- **MLOps:** MLFlow, Git, CI/CD, Docker, Dashboarding (GCP DataStudio, Streamlit, Dash)
- **Healthcare:** RXNORM, ATC, SNOMED, EHR, MRI segmentation, biometric signal (EKG, PCG, SSEP) analysis

📁 EXPERIENCE

Data Scientist | Data Science Health – Loblaw Companies Canada | Toronto, ON Feb 2020 – Present

- Leading Research Huddles, a company initiative to share **applied R&D ideas & consult on ML projects.**
- Developing knowledge graph embedding systems for patient disease progression mapping with several drug ontologies (RXNORM, ATC, UMLS) using **DGL-KE** and **PyTorch-Geometric**.
- Led COVID19 data migration by building in house probabilistic matching systems in **GCP** to migrate millions of records of patient data between two source systems. Built **GCP** workflows to ingest data from legacy systems into GCP using **Cloud Run & Cloud Functions**. Additionally, built the match framework in **Python** using **NLP** strategies to get high confidence matches resulting in a **76% match yield boost** over legacy methods with **90% specificity**.
- Built a COVID19 **demand forecasting insights** dashboard in **GCP Datastudio** to assist pharmacy business units in preparation for the COVID19 vaccination rollout using historical flu combined with survey data analysis.

Assistant Instructor | University of Toronto – SCS, Fintech | Toronto, ON Oct. 2020 – Present

- Graded weekly assignments, providing feedback on code including but not limited to: Visualization (**PyViz**, **Matplotlib**), Analytics (**Pandas**, **NumPy**, **SQL**) Machine Learning and Blockchain (**Solidity** smart contracts).
- Held office hours for over **30** students to reinforce class ideas such as Gradient Descent, Natural Language Processing (**NLP**) and programming, received a **4.91/5.0** satisfaction rating among attendees.

Deep Learning Researcher | Lunenfeld-Tanenbaum Research Institute | Toronto, ON July 2019 – Jan 2020

- Built a **3d-CNN model** and **3d gradient-class activation maps** (Grad-CAM) in **PyTorch** for prostate cancer detection using thousands of in house collected, 3D-MR data. Additionally, extended the use of the **focal Tversky loss function** for 3d applications by migrating codebase from **Keras** to **PyTorch**.

🎓 EDUCATION

Ryerson University | **Master of Applied Science, Electrical Eng.** Sept. 2017– Oct 2019

- **Thesis:** Towards improved medical image segmentation
- **Awards:** Received \$21K through Graduate Fellowship (2017, 2018) & Norman Esch Entrepreneurship Award

Ryerson University | **Bachelor of Engineering, Biomed Eng.** Sept. 2012– Jun 2017

- **Capstone:** Wireless intraoperative neuromonitoring system for spinal surgery

📄 PATENTS & PUBLICATIONS

Patent: [Stress management in clinical settings](#). United States Patent US20210125702A1.

Publication: Deniffel, Dominik, **Abraham, Nabila** et al. "[Using decision curve analysis to benchmark performance of a magnetic resonance imaging–based deep learning model for prostate cancer risk assessment](#)." European Radiology 30.12 (2020): 6867-6876.

Publication: **Abraham, Nabila**, and Naimul Mefraz Khan. "[A novel focal tversky loss function with improved attention u-net for lesion segmentation](#)." 2019 IEEE 16th International Symposium on Biomedical Imaging (ISBI 2019). IEEE, 2019.

★ ACTIVITIES

Graph Neural Networks stream owner | Aggregate Intellect Socratic Circles

March 2020 – Present

Machine Learning Mentor | SharpestMinds

March 2020 – Present