Khoi Nguyen

✉ nguyentienkhoi01@gmail.com   📞 438-938-0432   📍 Montreal, Canada

🌐 khoitiennguyen.github.io   ◯ KhoiTienNguyen   in khoi-tien-nguyen

Work Experience

Intact Insurance, Data Lab   Montreal, Canada
DATA SCIENCE INTERN   *May 2023 – Aug 2023*

- Performed exploratory data analysis on different datasets to select relevant features and prepare clean data for flood risk model benchmarking.
- Investigated flood model's performance through geospatial analysis utilizing **PostGIS** and **SQL** on historic flood events.
- Evaluated claims notes classification model on recent data and assess its effectiveness on weather-related tasks.
- Wrote well-documented, reproducible **R** and **Python Jupyter** notebooks with visualizations to offer actionable insights.

McGill University, Distributed Digital Music Archives & Libraries Lab   Montreal, Canada
SOFTWARE DEVELOPER   *May 2022 – April 2023*

- Built workflow allowing users to label image layers and train optical recognition models to separate them.
- Developed essential image processing functionalities using **Python** to prepare training data for the models.
- Worked closely with researchers to apply iterative changes to the modelling process and perform experiments.
- Designed and implemented a dynamic data loading scheduler to improve image loading efficiency and speed up model training by three times.

Accreon Inc.   Fredericton, Canada
CO-OP STUDENT   *Sep 2018 – Jan 2019*

- Implemented new functionalities in the ETL pipeline using **Java** for more flexible data processing and retrieval.
- Extracted client information from a central database and processed it as compressed JSON files to improve data storage and data sharing.

Education

McGill University   Montreal, Canada
B.Sc. COMPUTER SCIENCE, GPA: 3.53/4.0   *Sep 2019 – May 2023*

- <u>Awards:</u> Major Entrance Scholarship
- <u>Courses</u>: Algorithms and Data Structures, Software Design, Operating Systems, Software Systems, Computer Networks.

Skills

Java · Python · APIs · Git · Docker · Nginx · Kafka · Bash · AWS · R · SQL · C · JavaScript · HTML · CSS

Projects

Korean to Vietnamese Phonetic Translator

- Used Text Normalizer in **Java** to decompose Korean words into characters and convert them to Vietnamese phonemes.
- Developed the frontend using **Vaadin** and built the project using **Maven**.
- Deployed on **Tomcat 8.5** and hosted as a web app using **AWS Elastic Beanstalk** and **Heroku**.

Link State Routing

- Simulated router message passing in link state routing networking protocol using **Java**'s Socket package.
- Maintained and updated each router's database concurrently with network activity utilizing multi-threading.
- Constructed network topology to compute shortest message relay path using Dijkstra's algorithm.

Movie Recommendation System

- Developed a pipeline to continuously collect data from a **Kafka** stream, pre-process the data, and retrain models.
- Implemented CI/CD with unit-testing, offline and online evaluations using **GitHub Actions**. Performed load-balancing with canary releases using **Docker** and **Nginx**. Monitored the system using **Prometheus** with **Grafana**.
- Trained an **XGBoost** model with hand-crafted features and **SVD** collaborative filtering, achieving 0.15 RMSE.