MAHMOUD ELSAFI ABDELHADI

(604) 781-5604 mahmoudashraf960@yahoo.com melsafi1 mahmoudabdelhadii mahmoud.elsafi.ca

SKILLS

Languages C · C# · C++ · Python · SQL · HTML · CSS · Typescript · GraphQL

Frameworks/Libraries Scikit-learn · Vue · React · Node.js · Docker · Pytorch · Tensorflow

Tools/Environments/Systems Git · AWS · JIRA · AKS/OCP · Linux · Windows · MacOS

EDUCATION

University of British Columbia, Canada
Expected graduation date: December 2023

Bachelor of Applied Science – Electrical and Computer Engineering
Cumulative GPA: 3.4, Upper-level GPA: 3.8

- *UBC International Major Entrance Scholarship* **2018 – Present**

*Awarded a **merit-Based $96,000 scholarship** given to top international students for outstanding academic achievement and extracurricular contributions*

- *Dean's Honor List* **2020 – 2023**

TECHNICAL EXPERIENCE

Full Stack Engineer – RBC
December 2022 - August 2023

Worked on the full stack development of a continuous risk assessment tool using Nuxt.js.

- Created web solutions to save hundreds of hours of auditing work yearly.
- Acted as the champion for Internal Audit on cloud migration exercises by identification of risk hotspots and deployment of best practices.
- Developed the mechanism for real-time functionalities by deploying a graphQL engine, which directly impacted users and digitally transform the audit process by removing manual reconciliation, redundancies & automating processes.
- Architected and implemented new features with project managers to meet customer requirements.
- Worked together with data scientists, designers, and project managers to deliver the best possible user experience.

Data Engineer - RBC
September 2022 – December 2022

Worked on the data pipeline of a continuous risk assessment tool using Dataiku.

- Assessed the efficacy of business risks and controls by developing value driven analytics through an understanding of business policies and procedures.
- Supported the major risk assessment project by ingesting data from various sources that are required for key risk indicators computations and ensuring the meta-data successfully gathered all updated information for the dashboard feed.
- Communicated with auditors across different departments to collect requirements for new Key Risk Indicator (KRI) data ingestion.
- Developed ETL processes to enable automated KRI implementation, resulting in increased pipelines' efficiency and accuracy.
- Implemented robust data quality checks, reducing erroneous outcomes and data loss during snapshot dataset capture into staging tables.

Machine Learning Engineering Intern —Tutankhamun FC, Egypt
May 2021 - August 2021

Tutankhamun FC is a professional football club in Fayoum, Egypt

- **Collect in-game data** to Excel Spreadsheet & performed **data cleaning** and **feature engineering** in Python
- **Implemented** SVM, KNN, Random Forest and Logistic regression **models to predict game outcomes** using Sklearn
- **Evaluated models** over real-time data; best model had a **63% Accuracy** with **4.5% standard deviation** over 10 games

PROJECTS

Formula One Prediction Neural Network
April 2022 – April 2022

- Used BeautifulSoup's HTML parser & JSON to **query data** from Ergast API, official F1 website and Wikipedia to dataframes
- **Built 2 neural networks** using data from 2000 to 2019 as training data. Programmed both:
  - a neural network with 3 linear layers, Softmax as activation and dropout layer
  - an MLPclassifier from Sklearn framework

- **Tested both models** with data on 2020 and 2021 season; best model **predicted 14/22 race winners** for 2020 season and **11/17 race winners** for 2021 season, with each race having 20 drivers
- Used **Weights and Biases API** for hyper-parameter **tuning** and to **visualize results** of each model

Image Classification Convoluted Neural Network
March 2022 – April 2022

- Built & programmed the whole pipeline of a 3 channel CNN deep learning model in Pytorch with 14 hidden layers to classify 32x32 pixel CIFAR-10 images into 10 labels
- Split the data into training batches and validation batches in Tensorflow; Achieved a validation accuracy of 63%

Principal Component Analysis (grade: 95%)
February 2022 – March 2022

- Used logit regression to predict the class label of images using principal components representation of images
- examined how the classification error changes with the number of principal components used.

SVM & Random Forrest model with Cross Validation (grade: 95%)
February 2022 – March 2022

- Programmed Linear Kernel and RBF (Gaussian) kernel SVM and random forest classifier models in sklearn
- Implemented 5-fold cross-validation for hyper-parameter selection for all models

Linear & Logistic regression model (grade: 100%)
January 2022 – February 2022

- Built different linear regression models with different complexities to find the model with the smallest error
- Programmed a by-hand algorithm using gradient descend to iteratively update parameters until convergence
- Implemented a logistic regression model in Sklearn to accurately fit the data and extract optimal parameters

ENGINEERING STUDENT TEAMS

UBC Rocket Student Design Team
September 2019 – September 2021