John Park

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Education

York University Jan 2019 – Oct 2023

Double Honours Bachelor of Arts in Applied Mathematics, Economics *Toronto, Canada*

Courses: Data Analytics and Machine Learning, Advanced OOP, Data Structures, Time Series Analysis, Econometrics

Work Experience

yuHacks 2022 Hackathon - Team Lead Feb 2022

York University *Toronto, Canada*

- Organized an MLH-partnered online hackathon for students at York University and Greater Toronto Area to create creative solutions.
- Hosted fireside chats with alumni in Banking and Big Tech companies to speak about breaking into their respective industries for students.
- Organized over 150 hackers with 30 teams, raised 4000 CAD as prizes from sponsors.
- Maintained communications with future organizing teams to provide advice and legacy support.

Google Developer Student Club - President Jun 2021 – Jun 2022

York University *Toronto, Canada*

- Led a student run university club at York University for students to engage and collaborate with each other using Google Cloud technologies and other frameworks of interest.
- Partnered with Google Developer Experts in Canada to host beginner workshops in machine learning methods using TensorFlow with simple data sets.
- Partnered with other computer science student clubs in York University to deliver guided workshops in various frameworks and languages.

Projects

Kaggle - Credit Card Fraud Detection with kNN classifier and PRAUC *Python, sklearn*

- Cleaned and performed ETL on a Kaggle Credit Card Fraud dataset $n = 284,807$ to develop a kNN classifier in Python with sklearn library to perform binary predictions fraudulent credit card usage; normalized and trained the kNN classifier algorithm via Euclidean distance and with neighbours of k = 11.
- Performed Precision-Recall Area Under Curve method to determine performance of the kNN algorithm to yield 0.93 AUC accuracy rate to use as baseline for future credit card usages to prevent credit card fraud and minimize false predictions.

High Dimensional Data Visualization via t-SNE with Early Exaggeration *Python, R*

- Implemented t-SNE with Early Exaggeration Factor developed by Laurens van der Maaten and Geoffrey Hinton in Python and R.
- Used MNIST dataset and sklearn library to implement a t-SNE algorithm with varying early exaggeration factors to showcase efficacy of the exaggeration factor with Matplotlib library.
- Implemented the same algorithm on Iris dataset in R using Rtsne library to project 3D data into 2D for convenient data visualization.

Dota 2 Match Predictor with Tensorflow and OpenDota API *Python*

- Implemented a neural net algorithm with Tensorflow to predict the winning team in a ranked public game of Dota 2 from players' choices of heroes.
- Parsed JSON data in Python from OpenDota API to perform ETL on parsed data (n=10,000) into a pandas dataframe to train the neural network model, for a 84% prediction rate. Performed Confusion Matrix test to
- Future works include models with higher prediction rates based on larger parsed data sets with implementation of Python back-end with Flask for users to predict their own match predictions.

Technical Skills

Languages: Python, Java, MATLAB, R, SQL, JavaScript, HTML, CSS, Tableau, VBA
Developer Tools: Visual Studio Code, RStudio, Eclipse, Jupyter Notebook, Google Colab, LaTeX
Libraries : Numpy, Pandas, sklearn, yfinance, Matplotlib, TensorFlow