Portfolio Website
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Rafat Ashraf Joy

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Standardized Test Scores

Graduate Records Examination (GRE) :

Total	Quantitative	Verbal	Analytical
328	169	159	4.5

IELTS :

Total	Reading	Writing	Listening	Speaking
NA	NA	NA	NA	NA

Education

Bachelor of Science, Computer Science and Engineering,
Shahjalal University of Science and Technology, GPA: 3.50/4.00 **Jan 2018 — Dec 2021**

Experience

ML Engineer (Intern) **Jul 2020 — Sep 2020**
Pioneer Alpha Dhaka, Bangladesh

- Deployed models to web using Flask web framework.
- Gained hands-on experience of Scikit-learn, Keras, PyTorch libraries.

Publications

1. **An Interpretable Catboost Model to Predict the Power of Combined Cycle Power Plants**, in IEEE Xplore. doi:10.1109/ICIT52682.2021.9491700

2. **Fine Tuning the Prediction of the Compressive Strength of Concrete : A Bayesian Optimization Based Approach**, in IEEE Xplore. doi:10.1109/INISTA52262.2021.9548593

Skills

Programming Languages	Python, C++, Scala, SQL
ML Libraries	Pytorch, Tensorflow, Scikit-learn, Xgboost, Catboost
Data Visualization Libraries	Matplotlib, Plotly
Databases	MongoDB, MySQL
Web Frameworks	Flask
Softwares	Tableau
Others	Linux, Git, Bash

Projects

Customer Churn Prediction Web App **Scikit-learn, Flask, Heroku**

- A multi-layer perceptron classifier model runs in the backend of this web app to predict customer churn in context of the telecom industry. The model has attained 96 % accuracy on the test dataset. This project has been deployed to Heroku utilizing Flask web framework.

Estimating Cloud Data Center Workload **Keras, Scala, Optuna, Statsmodel**

- The dataset used in this project was taken from: TU Delft's business critical cloud workload time series data. First, the data was smoothed using 'savitzsky golay' filtering; this step removed the noise. ARIMA was applied to estimate the workload using Statsmodel. Then, several deep learning methods : LSTM, RNN, TCN(Temporal Convolutional Networks) were applied on the data. Finally, all of the deep learning models were hyper parameter tuned using Optuna.

Detection of COVID-19 from Raman spectroscopy **Scikit-learn**

- This project applies a LASSO-regularized logistic regression model to detect Covid-19 from Raman spectroscopy data. As the number of features was very large compared to number of observations, we resorted to LASSO regression to avoid overfitting. The model is initialized with a liblinear solver along with L1 (LASSO) penalty, and achieved 97 % accuracy on the test dataset.