MD RIFATUL ISLAM RIFAT

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OBJECTIVE

I am a passionate Data Science and Machine Learning researcher with over 3 years of hands-on experience. Currently, I am pursuing a Masters/PhD program where I will be able to enhance both of my theoretical and technical knowledge in the discipline of Machine Learning.

RESEARCH EXPERIENCE

Publications:

[1] Md Rifatul Islam Rifat, and Abdullah Al Imran. **"Incorporating Transformer Models for Sentiment Analysis and News Classification in Khmer."** *10th International Conference on Computational Data and Social Networks, November 2021, Montreal, Quebec. Springer.* **[Accepted]**

[2] Mahmud Hasan Munna, Md Rifatul Islam Rifat, and ASM Badrudduza. **"Sentiment Analysis and Product Review Classification in E-commerce Platform."** *In 2020 23rd International Conference on Computer and Information Technology (ICCIT) (pp. 1-6). IEEE.*

[3] Abdullah Al Imran, Md Rifatul Islam Rifat, and Rafeed Mohammad. **"Enhancing the classification performance of lower back pain symptoms using genetic algorithm-based feature selection."** *In Proceedings of International Joint Conference on Computational Intelligence (pp. 455-469). Springer, Singapore, 2020.*

[4] Md Rifatul Islam Rifat, Abdullah Al Imran, and A. S. M. Badrudduza. **"Educational performance analytics of undergraduate business students."** *International Journal of Modern Education and Computer Science* 11.7 (2019): 44.

[5] Md Rifatul Islam Rifat, Abdullah Al Imran, and A. S. M. Badrudduza. **"EduNet: a deep neural network approach for predicting CGPA of undergraduate students."** *In 2019 1st International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT). IEEE.*

[6] Abdullah Al Imran, Md Nur Amin, Md Rifatul Islam Rifat, and Shamprikta Mehreen. **"Deep neural network approach for predicting the productivity of garment employees."** *In 2019 6th International Conference on Control, Decision and Information Technologies (CoDIT) (pp. 1402-1407). IEEE.*

Jun 2019
Jul 2018

Bachelor Thesis

Rajshahi University of Engineering & Technology (RUET)

Research Field: Applied Data Science and Machine Learning

Thesis Title: Predicting the Performance of Undergraduate Students
Supervisor: A. S. M. Badrudduza

Description: My thesis period can be divided into two phases: In the first phase, I performed classification analysis on the educational transcript's data and developed a machine learning model that classifies undergraduate students' performances. Several classification techniques such as Gradient Boosted Tree, Random Forest, Tree Ensemble, Decision Tree, SVM, and KNN had been tested on the educational data. In the second phase, I performed regression analysis on the same dataset where I designed a Deep Neural Network (DNN) architecture and developed a model to predict the students' final CGPA.

Links: Google Scholar Dblp

PROFESSIONAL EXPERIENCE

Current
Jul 2021

Data Scientist

SSL Wireless

Project 1: Voice Recognition

Description: This project aims to facilitate and expedite the work of Sales Representatives, whose job is taking orders of products from different shops, by providing a voice recognition system for product names. I have built a voice recognition model by fine-tuning the wav2vec2 pre-trained model with a dataset that contains 59 unique product names and it recognizes the product names from voice with high accuracy.

Project 2: Customer Segmentation

Description: In this project, I have analyzed millions of customers' data and performed customer segmentation for target marketing. As this company provides the largest payment gateway and SMS gateway aggregator in Bangladesh, every day millions of data is being generated here. I have prepared some feature engineering algorithms to generate the customers' demographic features from raw data. Then I have trained the K-means Clustering algorithm for building a customer segmentation model that automatically segments all of the customers based on their demographics and purchasing behavior.

Project 3: Invoice Information Parser

Description: In this project, we built a deep learning model that automatically detects all of the information from invoices of different formats. We built a skew corrector that provides the aligned images by removing the skewness of the images. Then, we applied the Cloud Vision API for recognizing the optical characters from images and applied a pre-trained detectron2 algorithm for detecting the tables from the image of invoices. Additionally, we built complex algorithms using the coordinates of characters for 1) parsing several fields out of the table and 2) organizing the table formatted data as the original format.

Jun 2021
Oct 2019

Data Scientist

Robi Axiata Limited, Axiata

Project 1: Churn Prediction

Description: In this project, I have built a DNN model for predicting whether a customer of Robi Axiata Limited will be churn or not within the following two months. We have used around 1.2M samples data with 41 features to train this churn prediction model. Also, I have built an interactive dashboard using Tableau to visualize the churn related insights obtained from the dataset.

Project 2: Next Best Offer prediction (NBO)

Description: This project was for the Campaign and Customer Lifecycle Management of Robi Axiata Ltd. In this project, I developed a DNN model that recommend the next best data pack for each of the subscribers based on their previous data usage behavior to increase company's total data revenue. I trained this model with around 1M customers' 29 attributes.

Project 3: Khmer NLP

Description: This project was for Smart Axiata, the leading telecom operator in Cambodia, to analyze the Smart's Facebook and Chatbot's data efficiently. In this project, firstly, I built a pre-trained model for the Khmer language from scratch using BERT. For generating the training corpus, I built a Web Scraper by which I collected around 100K Khmer articles from several websites. Also, I modified google BERT official code to make compatible with Khmer language. Then, using Transfer Learning, I have developed three deep learning models for the three different applications such as Sentiment Analysis, Topic Classification, and NER. I deployed the model using Google Cloud Function API and Docker.

Project 4: Gross Addition Revenue Maximization and Automation

Description: The objective of this project was maximizing the GA revenue of Robi Axiata Limited by quality acquisition. We trained a DNN model to predict the number of quality acquisition for each of the retailers over the country. We also performed the E2E automation so that the model automatically set the GA target for each of the retailers each month. We also built a Tableau dashboard that automatically visualizes the analysis of the model outcomes and retailers' activities to the decision makers.

Sep 2019
Aug 2019

Machine Learning Intern

Silicon Orchard Ltd

Project 1: Assessment Summarizer

Description: The goal of this project was to build a tool using the NLP techniques for the Human Resource division of a company to make the recruitment process fast. In this project, I automated the assessment process of the CV using several NLP methods such as Glove, WMD, etc.

Project 2: Fraud Detector

Description: The goal of this project was to detect fraudulent reviews by leveraging reviewer's historical stylometric in Amazon, Yelp, Facebook, and Google Reviews. In this project, I formed an efficient and sophisticated algorithm to detect fraudulent reviews using Natural Language Processing techniques.

EDUCATION

Sep 2019
Jan 2015

B.Sc. in Electronics and Telecommunication Engineering

Rajshahi University of Engineering & Technology (RUET), Bangladesh

CGPA: 3.61/4.00 (Last 2 years CGPA: **3.78**)

Relevant Courses: Computer Fundamentals and Programming, Data Structure and Algorithm, Numerical Methods in Engineering, Transform Techniques and Linear Algebra, Complex Variable and Statistical Analysis, Calculus and Matrices, Differential Equations & Three-Dimensional Geometry, Digital Image Processing.

TECHNICAL SKILLS

Programming Languages:	Python, SQL, C++, C, Java SE, Assembly_8086, MATLAB
Machine Learning Tools:	Pandas, NumPy, SciPy, Scikit-Learn, TensorFlow, Keras, KNIME
NLP Tools:	NLTK, spaCy, HuggingFace, Gensim, polyglot, CoreNLP,
Visualization Tools:	Tableau, PowerBI, Plotly Dash, Data Studio, Matplotlib, Seaborn
Database Systems:	Oracle, PostgreSQL, MySQL, MongoDB
Big Data Tools:	Apache Spark (PySpark, Spark SQL)
Cloud Platforms:	Google Cloud Platform (GCP), Amazon Web Services (AWS)
Development Skills:	Flask, FastAPI, Web Technologies (Web Scraping, Selenium, HTML, CSS)
Version Control:	Git
Operating Systems:	Ubuntu, Windows, Linux Mint

ACHIEVEMENTS

2020 **Certified Robi AAA-2020** after successfully completed the training on three subject matters: Analytics, Artificial Intelligence, and Agility.

2019 **1st Runner Up** as a Data Scientist at Robi Axiata Datathon 2019, Bangladesh

2019 **Finalist** at Financial Inclusion Data Hackathon, UNCDP Bangladesh

2015 - 2018 Technical Scholarships, RUET

EXTRACURRICULAR ACTIVITIES

2015 – 2018 Member at RUET English Club

2017 – 2018 Member at Electronics Society of RUET (ESR)

2018 – 2018 Member at Innovation Society of RUET (ISR)

REFERENCES

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