R M Asif Amin

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EXPERIENCE

Bkash | Engineer, Machine Learning and Data Science — Dhaka, Bangladesh | May 2019 – Sep 2023

Delivered ML and Data Science solutions at scale. Being the primary way of transferring money around for an entire nation, it's been dubbed as having world-changing impact.

- **Visual Document Understanding from Heterogeneous Documents Using Vision Transformers and Transfer Learning:** In a scarce data situation, designed and implemented a document information extraction system by using **transfer learning** and fusing multiple **synthetic data generation** techniques. Implemented a production inference system by combining **Docker, FastAPI and NGINX** able to ensure **optimal GPU usage**. This **connected a large, unbanked section of the population to the financial stream** by enabling them to sign up with birth certificates.
- **Income Score Calculation:** Designed and Implemented income score calculation by **combining GINI scores with Maslow's Hierarchy of Needs** for dynamic limit-setting of automated micro-loan disbursement. Orchestrated whole system with **Apache Airflow** for scheduled calculation.
- **Lifetime Value Prediction:** Implemented a **Deep Probabilistic Model** to predict customers' future business value based on published research from Google. Communicated it's advantage and **convinced business teams** to integrate its predictions into consequential business decisions.
- **Event Time Prediction:** Developed an effective and accurate Event Time Prediction system using the **Survival Analysis** framework. Used **Deep Learning** to predict multiple business-critical metrics(e.g. first transaction time for new users and loan instalment repayment time) with more than **85% accuracy** (based on brier score).
- **Pipeline Orchestration and Experiment Management**: Used **Apache Airflow** to orchestrate Machine Learning pipelines and integrated with **Hadoop File System**. Ensured scheduled execution and continuous monitoring of training/inference of multi-million(**usually 30-50 million+**) data points. Implemented **MLFlow** to **track model performance metrics** and experiment results. Implemented **slack & mail alert system** for training failures.

North South University | Research Assistant (RA) — Dhaka, Bangladesh | Jan 2018 - Dec 2018

- **Land cover change detection from satellite imagery**- Used **unsupervised clustering** algorithms like **K-Means and DBSCAN** on satellite imagery and spectral response patterns to detect land cover change of the city of Dhaka.
- **Time-series classification with neuro-fuzzy models-** Investigated applicability of adaptive neuro-fuzzy approaches to a complex time-series classification task using the **Matlab Fuzzy Logic Toolbox**.

EDUCATION

Bachelor of Science in Computer Science and Engineering — Dhaka, Bangladesh | Mar 2019

North South University, Distinction: Cum Laude,GPA: 3.51/4.00

Coursework: Data Mining, Artificial Intelligence, Scientific Reasoning, Algorithm Design & Analysis, Numerical Methods, Software Engineering, Operating Systems, Internet & Web Technology, Probability & Statistics, Computer Architecture.

SKILLS

Programming Languages: Python, Java, SQL, C, Matlab
Libraries and Frameworks: Pandas, Numpy, Tensorflow, Keras, Pytorch, Scikit-learn, XGBoost, LightGBM, Scipy, Seaborn
Production ML Tools and Frameworks: Apache Airflow, Mlflow Tracking, FASTAPI, Docker, Nginx , Dask
Relevant Tools and Technologies: Git, Jupyter, Hadoop File System, Conda, Jira
Human Languages: English- Excellent (IELTS: 8.5/9), Bengali- Native.

STANDARDISED TESTS

GRE: 327/340; Verbal: 163/170, Quant: 164/170, AWA: 4/6
IELTS: 8.5/9; Reading: 9/9, Listening: 9/9, Speaking: 8/9, Writing: 8/9

PUBLICATIONS

- "Detection of Exoplanet Systems in Kepler Light Curves Using Adaptive Neuro-Fuzzy System", *2018 International Conference on Intelligent Systems (IS), 2018*, pp. 66–72
- "Satellite image based characterization for monitoring urbanization and land cover change", *International Journal of Networked and Distributed Computing*,vol. 7, pp. 1–10, 1 2018, issn: 2211-7946