R M Asif Amin

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EXPERIENCE

Bkash | Engineer, Machine Learning and Data Science Solutions at scale. Being the primary way of transferring money around for an entire nation, it's been <u>dubbed</u> 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 <u>Google</u>. 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.

FDUCATION

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", <u>2018 International Conference</u> on Intelligent Systems (IS), 2018, pp. 66–72
- "Satellite image based characterization for monitoring urbanization and land cover change", <u>International Journal of Networked</u> and Distributed Computing,vol. 7, pp. 1–10, 1 2018, issn: 2211-7946