Rashik **Islam**

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Proficient in data-driven applications with a passion for solving real-world problems with predictive learning, deep learning, statistical modeling, and creating the feedback loop of learning mechanisms.

Work Experience

Nov 2021 - Feb 2024 **DATA SCIENTIST** *Fresenius Group (Curalie GmbH), Berlin, Germany*

- On top of the diagnosis model, a trust model was developed to automate laboratory tests. This improved detection accuracy by about 3-5%.
- Participated actively in the creation of a multilingual knowledge base of diseases, symptoms, risk factors, and lab testing
- Created and implemented HPO workflow for tuning machine learning models
- Built pipelines for monitoring deployed ML models
- Actively involved in the execution of statistical analysis and in-depth error analysis in order to promote a culture of learning from mistakes by utilizing incremental development cycles and feedback loops

Dec 2020 - Aug 2021 **MASTER'S THESIS** *Charité – Universitätsmedizin, Berlin, Germany*

- Construction of a data pipeline to clean/extract data from >100.000 clinical notes/reports
- Presented multi-modal deep learning strategy to predict Kidney graft rejection that enhances ML models by fusing neural network architectures
- Integrated both textual and tabular data which elevated graft loss prediction which resulted an improvement of 3-6% F1-score compared to baseline

Mar 2019 - Mar 2021 **WORKING STUDENT, DATA ANALYTICS** *FUNKE Digital GmbH, Berlin*

- Engaged in the development of eight chatbot applications in collaboration with end-users, i.e. journalists/department leads, that harvest data from different sources to generate weekly and monthly reports.
- Forecasting algorithms for 30 portals were created with an aim to enhance market understanding and maximizing return on investment.
- POC was conducted to determine whether an article should be placed behind a paywall system comparing several ML algorithms

May 2016 - Sep 2018 **SOFTWARE RESEARCH ENGINEER** *Codemen Solutions Inc, Dhaka, Bangladesh*

The company provides end to end IT solution for its clients and its edge being integrating smart data, AI with embedded solutions.

- Developed an application for steel rod factories to automate the process of rod counting through image processing technique
- Involved in developing Proof Of Concepts i.e. ArgosAI (in collaboration with premiseHQ), a digitized data stream activated through video cameras that can be used to count objects, manage the use of spaces.
- Actively took part in building ETL pipeline from different sources using Rest API

Education

May 2024 -TBD **PH.D. IN ATMOSPHERIC SCIENCES** *University Of Houston, Houston, USA [Expected Start: May 2024]*

Oct 2018 - Oct 2021 **MASTER OF SCIENCE (M.SC.) IN DATA SCIENCE** *Berlin University of Applied Sciences, Berlin, Germany* [CGPA: 3.7]

Thesis: "A multi-modal deep learning strategy for kidney graft loss prediction on imbalanced dataset."

Projects:
- Vision based absolute Pose estimation of Autonomous Vehicle using deep learning, Url
- Sudoku puzzle solver from images using deep learning, Url

Apr 2012 – Apr 2016 **BACHELOR OF SCIENCE (B.SC.) IN COMPUTER SCIENCE** *American International University Bangladesh (AIUB), Dhaka, Bangladesh* [CGPA: 3.7]

Thesis: "Automated Portable System for Bacteria Colony Counting & Contamination Measurement of Water Using Image Processing Technique"

Publications/Personal Projects

Jan 2024 **EVALUATING THE EFFICACY OF DEEP LEARNING AND HYBRID MODELS IN FORECASTING PM2.5 CONCENTRATIONS IN TEXAS: A 7-DAY PREDICTIVE ANALYSIS** *2024* preprint doi

Jan 2023 **HYBRID MODEL OUTPERFORMED INDIVIDUAL MODELS IN PREDICTING DROUGHTS IN A SEMI-ARID REGION OF BANGLADESH** *2023* preprint doi

Oct 2020 **POTENTIAL OF ARIMA-ANN, ARIMA-SVM, DT AND CATBOOST FOR ATMOSPHERIC PM2.5 FORECASTING IN BANGLADESH** *2021* Atmosphere Journal Vol. 12, number 1, pages 100 doi

Skills

Programming Languages **3+ years**: Python, **1+ years**: R | SQL, **1 year:** C++ | Javascript | HTML | CSS

Database **1+ years:** MySQL | Microsoft SQL Server | NoSQL

Machine Learning **1+ years:** Linear Regression | GLM | Decision Tree | Random Forest | GBM | SVM | ARIMA | Neural Network | LSTM | GRU | Transformers

Tools & Frameworks **1+ years:** ClearML | Matplotplib | Numpy | Pandas | Scikit-Learn | PyTorch | Keras | Hugging Face | NLTK | OpenCV | Shapely | Matplotlib | Plotly | ggplot | dplyr | Docker , **1 year:** RapidMinder | Pyspark | Kafka| Streamlit

Others **1 year:** Google Cloud Platform | AWS | FastAPI| Flask **1- year:** Trifacta, **1+ years:** Anaconda | Jupyter Notebook | R Studio | Visual Studio, **2+ years:** Git | Trello

Languages **Bangla:** Native, **English:** Fluent, C2, **German:** Beginner, A1