

Sumon Kanti Dey

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EDUCATION

NOAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY | B.Sc. IN COMPUTER SCIENCE

Passed Dec 2018 | Noakhali, Bangladesh • GPA: 3.32 / 4.00

Related Courses: Data Structure and Algorithm, Digital Image Processing, Artificial Intelligence and Neural Networks, Software Engineering and Information System Design, Database Management, Andrew NG's Machine Learning on Coursera, Linear algebra.

EXPERIENCE

LEADBOOK.COM | ENGINEER SCIENTIST

Apr 2020 - Present | Singapore

- Work on the back-end Data acquisition and Data pipelining.
- Improve data reliability, efficiency and quality.

HIFI DIGITAL LTD | PYTHON DEVELOPER

Mar 2019 - Mar 2020 | Banani, Dhaka

- Developed large scale information Retrieval tool using Selenium and BeautifulSoup.
- Bootstrapping production ready machine learning models.
- Present information using data visualization techniques like Tableau, Plotly.
- Data Engineering and pipe-lining the data in python.
- Processing, cleansing, and verifying the integrity of data used for analysis.
- Design, development, refactor and deploy backend API in Django and AWS.

TECHNICAL SKILLS

Languages : Python, C/C++, Java, JavaScript, D3.js, SQL, Prolog, Swift, \LaTeX .

Frameworks/Packages : BeautifulSoup, Selenium, Git, Tableau, Flask, Django.

Libraries and Tools: Scikit-learn, Tensorflow, Keras, NLTK, Matplotlib, Jupyter, Spyder, Tweepy, Pandas, AWS.

Operating System : Windows, Linux.

PROJECTS

RNN AND CNN NETWORKS FOR SARCASM DETECTION VIA AUXILIARY AND EMOTION FUSION

- Collected 32k tweets with sarcastic and non-sarcastic marker and developed an annotated sarcasm dataset.
- Proposed an improved context, contrast and semantic modeling network for sarcasm detection.
- Proposed a noble fusion methodology (Handcrafted text features for stylistic pattern extraction and Deepmoji pretrained vectors for emotion mapping for short text) with convolution and recurrent neural networks.
- **Achieved improved SOTA results on six benchmark datasets.** [manuscript under review]

TOXIC COMMENT CLASSIFICATION CHALLENGE ON WIKI DATA

- Six types of toxicity detection from wiki conversation text using Logistic Regression with TF-IDF words and char n-grams. Accuracy 0.9754.
- Implemented pooled GRU with Pre-trained FastText Word Embeddings which was outperformed previous one. Accuracy 0.9828.

QUORA INSINCERE QUESTIONS CLASSIFICATION

- Implemented ensemble technique with different embedding (Glove, Word2Vec, FastText). Accuracy : 0.682.
- Optimized training by applying feature engineering technique and text preprocessing.

BENGALI.AI HANDWRITTEN GRAPHEME CLASSIFICATION

- Multi class classification challenge where Need to classify three constituent elements from an image: grapheme root, vowel diacritics, and consonant diacritics.
- Apply active Contour Based Segmentation for image preprocessing.

- 64x64 pixels with one single channel image fit into a MultiOutput CNN model to classify three class from the image.

REAL TIME ROAD CONDITION MEASUREMENT SYSTEM

- Designed a system which can detect Crack, Pothole, Faded severity from road image.
- Implemented Faster R-CNN InceptionV2 model pretrained on COCO large-scale object detection dataset.
- Used Django Rest framework and AWS for deploying machine learning model.

IRON ORE FUTURE PRICE PREDICTION ON MULTIVARIATE TIME SERIES DATA

- Implemented Deep Learning and time series (ARIMA, SARIMA, VAR, VARMAX, Facebook Prophet) model to forecast the future price of Iron Ore.
- In backend used Django Rest Framework and AWS for deploying the forecasting model.

EXTRACT TABULAR DATA FROM MARKET INTELLIGENCE REPORT

- Implemented IMAP standard email protocol to fetch email subject and body and email attachment. Used R to Extract Tabular Data from PDFs.
- Used Advanced Python Scheduler to fetch email every 2hrs and Django REST Framework to run the web application.

APTOS 2019 DIABETIC RETINOPATHY DETECTION TO STOP BLINDNESS

- Used Pre-trained EfficientNet with finetuning for classification task.
- The small-scale model finished at 199th place out of 2931 teams.

IEEE-CIS FRAUD DETECTION (DETECT FRAUD FROM CUSTOMER TRANSACTIONS) Fraudulent Transactions Detection

- Implemented Kfold XGBoost. Accuracy: 0.935.
- Applied combination of LightGBM and XGBoost with PCA and EDA strategy. Accuracy: 0.941.

A FLASK WEB APP FOR HANDWRITTEN DIGIT RECOGNITION USING A CONVOLUTIONAL NEURAL NETWORK

- Used CNN model to train parameters on about 36,000 training examples from Kaggle MNIST Dataset.
- Flask used to run the web application and Keras used to help with the digit recognition.

ACHIEVEMENTS AND COMPETITIVE PROGRAMMING

I have joined several national and regional programming contest and solved almost 700 online judge problems in **Lightoj, UvaOJ, Codeforces, Codechef, Spoj**. I have completed Andrew NG's machine learning Course on Coursera.

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| • 1st place at CSTE carnival'15 Programming Contest, NSTU. | 2015 |
| • 17th place at DIU ACM ICPC Dhaka Region Worlds finals Warm-up. | 2016 |
| • 1st place at inter University programming Contest. | 2016 |
| • Honorable mention at ACM ICPC Asia Dhaka Regional Contest. | 2016 |
| • 24th place at SUB Inter University Programming Contest. | 2017 |
| • Earn a Certificate for completing Andrew NG's machine learning course on Coursera. | 2018 |

SOCIETIES

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| • Served as the General Secretary at departmental computing club.
Help to grow up a community of 150+ people. | 2017-2018 |
| • Organized 8+ programming competitions, 1 boot-camp, 6+ workshops and 10+ seminars. | |
| • Chief Judge at Intra NSTU PI Day Programming Contest(26 teams). | 2018 |
| • Organizer and Mentor at Junior Programming Boot-camp goicpc18 [45 participants]. | 2017 |
| • Workshop Trainer at CSTE Club Competitive Programming. | 2016-2017 |
| • Judge and Problemsetter at NSTU Intra CSTE programming Contest [30 teams]. | 2017 |

TALKS

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| • Choice of a Career on becoming a Potential Computer Science Grad at Noakhali S&T University. | Oct 2019 |
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