Hossain Md Saddam

Email: mshossaincse@gmail.com
Dhaka, Bangladesh
Phone: +8801521236005

GitHub, LinkedIn
Programming Language: **Python**, Java, JavaScript, C/C+

EXPERIENCE

Sr. Machine Learning Engineer, Braincraft Ltd. Mohakhali Dohs, Dhaka Oct. 2023 -

- The primary role is model building and fine-tuning, data preparation, augmentation, and report generation.
- Generating 10x high-quality annotated samples and improved 96% to 98.8% accuracy by U2Net Segmentation model for Braincraft background removal app.
- Designing endpoints for the face swapper model and making it a publishable package for deployment.

Machine Learning Engineer, Chowagiken Corporation, Hokkaido, Japan (Hybrid) Jun. 2020 - Aug 2022

- The primary role is model fine-tuning, data preparation, augmentation, and report generation.
- To some extent, model building and operation on the cloud.
- Designing high-quality annotated samples and improved 50% to 92% accuracy by BERT for Toyota text classification.
- Improve accuracy from 30% to 60% by Efficient-Net over pre-trained ResNet-50 for the top 10 tags out of 30 in the Toppan cloths tagging job.

Machine Learning Intern, Chowagiken Corporation, Hokkaido, Japan (Remote) Mar. 2020 - Jun.2020

- As a trainee, my primary role was to develop full-fledged self-manage complete deep learning projects, and learn key concepts in machine learning and deep learning.
- To implement a deep metric learning model called Triplet-Net after extracting the feature vectors using ResNet50 pre-trained model in Rolex reference recognition task.
- I am building a Japanese Ukiyo-e-style generator using a generative model called Cycle Gan.

Machine Learning Engineer, BJIT Ltd**,** Dhaka, Bangladesh **(**On-site). Jan. 2019 - Dec. 2019

- The primary role was learning and implementing classical machine learning algorithms such as Regression, classification, basic neural network, and natural language processing methods.
- To develop skills in deep learning models like CNN RNN and LSTM. To implement ResNet for famous cats and dogs' classification problems.
- To obtain the LICT fintech three-month internship certification from the ICT ministry of Bangladesh.

Software Engineer Intern, Orbund LLC**,** Dhaka, Bangladesh (On-site) Oct. 2019 - Dec. 2019

- The primary role was to learn and implement full-stack web development.
- I was adding a feature which was monthly student report generation in a student management system project.
- We exercised the Java-based framework Jsp, and web tools JS, jQuery, HTML, and CSS.

SKILLS

- **Frameworks & Libraries**: **Pytorch**, TensorFlow, Keras, Sk-learn, **Pandas**, **NumPy**, SpaCy, NLTK. Tensorboard, Visdom, **Matplotlib**, Seaborn.
- **Database**: **MySQL**, MongoDB, SQLite.
- **Cloud**: **GCP**, AWS(Familiar), Floydhub.
- **Soft-Skills**: **Git**, **GitHub**, GitLab**, Docker**, Docker-Compose, Kubernetes (Familiar)

PROJECTS

Toyota Text Classification using BERT.

- To apply EDA for understanding the data. To apply a simple rule-based method and achieved about 54% accuracy.
- Designed annotated datasets and upscaled the accuracy by 90% by pre-trained base BER model.
- I was the key developer and overall team leader of the annotation preparation. I made some key decisions that were recognized by the clients.
- Tools: **Python, Pytorch, SpaCy**

Semiconductor patent analysis, Tokyo Electron

- To design a web crawler for extracting the patent datasets and figure out the actual patent gazette number.
- To generate vectors from patent text word2vec and BERT and classify the vector by SVM and customized BERT provided by the client.
- I implemented scdv algorithms and customized BERT and improved the classified result by 5%.
- Tools: **Python, Pytorch, Django, ReactJS**

Bird Nest Detection on Japanese Street Electric Poles

- I performed model fine-tuning, data **augmentation**, and ETL processes as data pipelining tasks.
- In the initial phase, we achieved 70% accuracy with ResNet-50 pre-train model.
- Immediately **Meta** released their **Detectron2,** and we achieved 93.92% accuracy by Detectron2.
- Tools: **Python, Pytorch, Matplotlib, CV2**

Toppan Cloths Tagging

- My primary role was to perform model fine-tuning, performance improvement, and generate visualized image samples for report generation.
- Improve accuracy from 30% to 50% by using transfer learning Efficient-Net for the top 10 tags out of 30.
- I achieved 5% from 50% by applying a face mask to the human face of the image.
- Tools: **Python, Pytorch, CV2, Pandas.**

Rolex Wristwatch Reference Recognition

- Read and understood the paper about deep metric learning for implementing it.
- Extracted the wristwatch feature vectors by ResNet-50 and achieved 85% by deep metric learning called Triplet-Net.
- Visualized the classified feature vectors by t-sne and generated a project presentation report.
- Tools: **Python, TensorFlow, Keras, T-sne**

Japanese Ukiyo-e Style Generator

- This project was the most challenging of all of the above because I accomplished it while I had no prior practical knowledge about deep learning, especially generative deep learning.
- Generated Ukiyo-e style generator by Cycle GAN.
- Tools: **Python**, **TensorFlow**, **Matplotlib.**

EDUCATION

Bachelor of Engineering in Computer Science and Engineering Jun. 2013 – Jul. 2018
Shahjalal University of Science and Technology Sylhet, Bangladesh

PUBLICATIONS

"Bangla Word Clustering Based on Unigram to Hexa-gram Language Model" | 2016 View Publication

- To preprocess the large corpus of about 500MB Bengali text.
- Implemented probability distribution methodology and N-gram language models such as unigram to hexa-gram.
- To observe, the 5-gram model is the best among the six which was 94% accurate.
- Tools: Java.

Supervisor: Sabir Ismail, Assistant Professor, Department of Computer Science and Engineering, SUST.