Mohammad Sabik Irbaz
Former Lead Machine Learning Engineer

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Education

Islamic University of Technology(IUT)   Dhaka, Bangladesh
B.Sc. in Computer Science and Engineering (CSE)   Jan, 2017 - Mar, 2021
CGPA: 3.44/4.00 [**3.90** in the final semester]
Dissertation: "Medical Expertise Text Style Transfer using Denoising Autoencoders" [Report]
Supervisor: Dr. Kamrul Hasan, Professor, Department of CSE, IUT

Notre Dame College(NDC)   Dhaka, Bangladesh
Higher Secondary Certificate (HSC), 2016   GPA: **5.00**/5.00   Jul, 2014 - Dec, 2016

Cox's Bazar Government High School   Cox's Bazar, Bangladesh
Secondary Secondary Certificate (SSC), 2014   GPA: **5.00**/5.00   Jan, 2009 - Dec, 2013

Research Experience

Fordham Human Centered AI Research Lab   Mar, 2021 - Present
Department of CIS, Fordham University, NY, USA
Advisors: Dr. Md. Ruhul Amin, Dr. Ashique KhudaBukhsh (RIT, USA)
(1) COVID-19 Public Policy Stance Analysis — *NLP, Data Science, EDA, Topic Modeling* **[P6]**
(2) Mitigating Social Bias in NLP — *NLP, Explainability, Text Style Transfer*

Systems and Software Lab (SSL)   Jul, 2019 - Present
Department of CSE, IUT, Dhaka, Bangladesh
Advisors: Dr. Kamrul Hasan, Dr. Hasan Mahmud
(1) Automated wheelchairs for semi-paralyzed patients. — *Signal Processing, ML, Adruino*
(2) Medical Expertise Text Style Transfer — *NLP, Active Learning, Text Style Transfer* **[P5]**
(3) Query-focused Text Summarization for Bangla — *NLP, Low-resource, Data Scraping, Summarization*
(4) Negative Data Augmentation for NLP tasks — *NLP, Data Augmentation*

Computer Vision Lab (CVLab)   Nov, 2020 - Present
Department of CSE, IUT, Dhaka, Bangladesh
Advisors: Sabbir Ahmed
(1) Automatic Radiology Report Generation — *NLP, Image Captioning, Image Segmentation*
(2) Data-centric approach for Explainabile Text Classification — *NLP, Active Learning, Explainability*
(3) Logical Reasoning QA using Standardized Test Questions — *NLP, QA, CSR, Data Collection*
(4) Intended Sarcasm Detection in Arabic and English — *Multilingual NLP*

Teaching Experience

Amar iSchool   Dhaka, Bangladesh
Head Course Instructor   Mar, 2021 - Present
Applied Data Science and Machine Learning [Course Repository]
Our prime goal here is to empower the local Machine Learning and Data Science enthusiasts with a
limited background knowledge of Computer Science and Mathematics.

Publications

[P6] **"COVID-19 Public Policy Stance Analysis"**
Co-authors: Dr. Md. Ruhul Amin, Rupak Sarkar, Dr. Ashique KhudaBukhsh
Manuscript in preparation

[P5] **"Data-centric Approach towards Medical Expertise Style Transfer"**
Co-authors: Abir Azad, Zarif Ahmed, Ashfaq Raiyan, Raian Rahman, Dr. Kamrul Hasan, Hasan Mahmud
Manuscript in preparation

[P4] **"Real-time Bangla License Plate Recognition Pipeline for Low Resource Video-based Applications"** Alif Ashrafee*, Akib Mohammed Khan*, **Mohammad Sabik Irbaz**, MD Abdullah Al Nasim
Under Review [PDF]

[P3] **"End-to-End Natural Language Understanding Pipeline for Bangla Conversational Agents"**
Fahim Shahriar Khan, Mueeze Al Mushabbir, **Mohammad Sabik Irbaz**, MD Abdullah Al Nasim
Accepted in IEEE ICMLA 2021 [PDF]

[P2] **"Real-Time Face Recognition System for Remote Employee Tracking"**
Mohammad Sabik Irbaz, MD Abdullah Al Nasim, and Refat E Ferdous
Presented in BIM 2021 [PDF]

[P1] **"Nurse Care Activity Recognition Based on Machine Learning Techniques Using Accelerometer Data"**, **Mohammad Sabik Irbaz***, Abir Azad*, Tanjila Alam Sathi, Lutfun Nahar Lota
Presented in UbiComp/ISWC HASCA 2020 [DOI] [PDF] [Presentation] [Code]

Industrial Experience

Pioneer Alpha Ltd.   Dhaka, Bangladesh
Lead Machine Learning Engineer   Jan, 2021 - Sep, 2021
Supervised and delivered the following core projects successfully to the corresponding clients:
(1) Multilingual Chatbot as Business Assistant — *NLP, NLU, Low-resource, Tensorflow, Rasa, Flask*
(2) Low-resource Bangla License Plate Detection and Recognition — *Vision, Tensorflow, OCR, Flask*
(3) Face Detection and Recognition for Remote Office — *Vision, OpenCV, dlib, Flask*
(4) Adobe Premiere Plugin for Automated Video Editing — *Vision, OpenCV, dlib, Adobe Premiere*

Omdena Inc.   New York, USA
Lead Machine Learning Engineer   Apr, 2021 - Jun, 2021
Collaborated with 50 ML engineers from 20 countries on **Equilo Project** - Building Gender Equality Assessment Functionality using NLP. This large scale work was divided into 7 major tasks. I was the **task leader** of the team building the **recommender system** for the organizations with low gender equality scores. I also lead the team building the web app and deploying the whole data and ML pipeline to **GCP**. This project involved — *Scraping, NLP, GCP, Firestore, Django, ReactJS, StreamLit, Cloud SQL*

Nascenia Ltd.   Dhaka, Bangladesh
Software Engineer, Intern   Nov, 2019 - Jan, 2020
Worked on a large-scale government project on VAT automation, **Project Uddogi**
This project involved — *Ruby on Rails, HTML, CSS*

Selected Projects

An exhaustive list can be found here
(1) **Medical Expertise Style Transfer System for Layman Patients —** *PyTorch, Fastai, Flask* [Code]
(2) **Multimodal Multi-label Genre Classifier —** *PyTorch, Fastai, Numpy, Pandas* [Code]
(3) **Anime vs Animation vs CGI —** *PyTorch, Fastai, Flask* [Code]
(4) **Original Transformer for Bengali Translation —** *PyTorch* [Code]

Technical Skills

Programming Language: Python, C, C++, Ruby, Octave
Framework: Pytorch, fastai, Flask, Tensorflow, Keras, Ruby on Rails
Tools and Libraries: Git, LaTeX, Google Colab, Google Cloud Platform

Selected Awards & Achievements

An exhaustive list can be found here
– **Champion**, 2nd Nurse Care Activity Recognition Challenge 2020. Won a trip to Japan. **[P1]**
– **Finalist**, AI For Bangla Challenge 2021. **[P3]**
– **Runners Up**, IUT Computer Programming Contest 2019
– **Runners Up**, INWED Tech Fest IUPC 2019
– **2nd Runners Up**, EDU Inter University Programming Contest 2020.
– **2nd Runners Up**, Britannia University Inter University Programming Contest 2020
– **OIC Scholarship**, 75% expense coverage for undergraduate studies at IUT. [**2%** acceptance rate]

Competitive Programming Experience

– Solved **2000+** programming problems in different online judges using C++, Python.
– Participated in **20+** onsite Inter University Programming Contests and **200+** online contests.
– Participated in **ACM ICPC Dhaka Regionals** 3 times.
– Attended BACS - BUBT **National Programming Camp** 2017.
– Achieved 1632 max rating **(Expert)** in **Codeforces** and 1844 max rating **(Violet)** in **Codechef**.
– **Contest Judge**, 16th December Programming Contest 2019
– **Former Programming Instructor**, IUT Programming Community

Extra-curricular Activities

– **Associate Member**, Omdena Global Community
– **Former Vice President**, IUT Computer Society
– **Assistant General Secretary**, IUT 10th ICT Fest
– **Volunteer Coordinator**, IUT 9th ICT Fest
– **Class and Batch Representative**, IUT CSE'16
– Travelled across major locations in Bangladesh to understand the variance in demographics.

References

Available upon request