Khondker Salman Sayeed

4th year Undergraduate Student in CSE, BUET

[Website]   [Github]   [LinkedIn]   [Scholar]

SAU, Dhaka,
Bangladesh -1207
+8801876887630
salkhon050@gmail.com

EXPERIENCE

CSE BUET NLP Lab —*Undergraduate Research Assistant*
APRIL 2023 - PRESENT

Researching **multimodal** deep learning and **Vision Language Models** (VLM) for an undergraduate thesis. Curated a large **dataset** of newspaper articles, images, and summaries to improve the **abstractive summarization** task by including image data along with the article. Prepared a benchmark illusion dataset that tests the **visual understanding** capabilities of VLMs.

Northwest Power Generation Company — *Machine Learning Intern*
APRIL 2023 - MAY 2023

Worked with the powerplant maintenance team to develop a **Multi-Layer Perceptron** and an **LSTM** model to analyze the powerplant performance level and failure prediction. Analyzed powerplant sensor data to employ data-cleaning and **feature engineering** techniques that allowed the machine learning model to predict with better accuracy.

DLSprint 2.0 2023 — *Organizer and Instructor*
JUNE 2023 - AUGUST 2023

Served as an organizer of this open-for-all **Deep Learning Competition** about **Document Layout Analysis.** Conducted two **workshops** as an **instructor** on topics of common competition practices, computer vision, and image segmentation. Took ownership, being involved in the competition's conception to execution.

EDUCATION

Bangladesh University of Engineering and Technology
Bachelor of Science, Majoring in Computer Science and Engineering
APRIL 2019 - PRESENT

- Current CGPA: **3.9/4.0**
- University **Merit Scholarship** Recipient (4/6 Semesters)
- University **Dean's List** Scholarship Recipient (All Semesters)
- Member of IEEE Computer Society and Signal Processing Society

Notre Dame College — *HSC*
JULY 2016 - SEPTEMBER 2018

- GPA: **5/5**
- HSC Talent-pool **Scholarship** Recipient

St. Joseph Higher Secondary School — *SSC*
JAN 2008 - MAY 2016

- GPA: **5/5**
- SSC Talent-pool **Scholarship** Recipient
- Executive Member of Scintilla Science Club

PROGRAMMING LANGUAGES

Python
C/C++
Java
Javascript/Typescript

FRAMEWORKS/LIBRARIES

ExpressJS, React, NextJS
Flask, FastAPI,
TailwindCSS, MUI
Pytorch, Tensorflow

LANGUAGES

Bangla (Native)
English (Fluent)

INTERESTS

Physics
Football (Misnomer: Soccer)
Video Games

REFERENCES

AKM Ashikur Rahman
Professor at CSE, BUET
ashikur@cse.buet.ac.bd
Relation: Advisor

Rifat Shahriyar
Professor at CSE, BUET
rifat@cse.buet.ac.bd
Relation:
Thesis Supervisor

AWARDS

DLSPRINT 2022 — *Champion*

Hosted by Bengali.AI, Sponsored by Optimizely
JULY - SEPTEMBER 2022

- Task: **Speech Transcription** on the **Bengali Common Voices** Dataset
- Model: **wav2vec2**
- Kaggle: [DL Sprint - BUET CSE Fest 2022 | Kaggle](#)
- Team Name: **YellowKing**, Account: [Salman Khondker](#)
- Github: [DLSprint2022-Champion](#)
- Paper: [Applying wav2vec2 for Speech Recognition on BN-CV](#)

IEEE Video and Image Processing Cup — *Champion*

Hosted by IEEE Signal Processing Society, Georgia Institute of Technology at Kuala Lumpur Malaysia (ICIP2023)
AUGUST - OCTOBER 2023

- Task: **Biomarker Prediction** from retina OCT scans
- Model: **MaxViT**, **EVA02-ViT**, **InceptionNet**, **ResNet**
- Competition Page: [2023 IEEE SPS Video and Image Processing (VIP) Cup](#)
- Team Name: **Synapse**
- Paper: [Ophthalmic Biomarker Detection Using Ensembled Vision Transformers -- Winning Solution to IEEE SPS VIP Cup 2023](#)

EEE DAY 2023 Datathon — *1st Runners Up*

Hosted by BUET EEE, Apurba Technologies Ltd.
FEB - MARCH 2023

- Task: **Grammatical Error Detection** on an in-house dataset
- Model: **T5** Transformer
- Kaggle: [Apurba presents Bhashabhrom: EEE DAY 2023 Datathon | Kaggle](#)
- Team Name: **Schadenfreude**, Account: [Salman Khondker](#)
- GitHub Link: [Bangla-GED](#)
- Paper: [Bangla Grammatical Error Detection Using T5 Transformer Model](#)

AI For Bangla 2.0 - 2023 — *Honorable Mention*

Hosted by EBLICT, Bangladesh Computer Council
DEC 2022 - MARCH 2023

- Task: First word-level **Bangladeshi Sign Language Dataset** collection
- Model: **3DCNN**, **Image-RNN**, **STGCN**
- Host Page: [EBLICT Facebook](#)
- Team Name: **Silent Sentinels**
- GitHub Link: [BdSL40](#)

PROJECTS

Mobile-Doc — *A telemedicine web application*
- Backend: **FastAPI, MongoDB, Redis, BigQuery**
- Frontend: **React, MUI**
- Deployment: **Netlify**
- Link: Pokedoc
- Github: Pokedoc

Sub-C Compiler — *A compiler for a subset of the C programming language*
- Tools: **Flex** (Lexer), **GNU Bison** (Parser)
- Language: **C, C++**
- Github: Sub-C Compiler

Suntech — *An e-commerce web application*
- Backend: **Flask, OracleDB**
- Frontend: **Jinja2, HTML, CSS, VanillaJS**
- Github: Suntech

Ray-Tracing — *A rendering pipeline implementing ray tracing in OpenGL scenes*
- Language: **C++**
- Algorithms: **Phong Lighting Model, Recursive Reflection**
- Tool: **OpenGL**
- Github: Ray-Tracing

Enhanced xv6 OS — *Implementing Copy-On-Write and Memory Page-Replacement in the xv6 OS*
- Language: **C**
- Implemented **Copy-On-Write** and **Paging** to the barebones xv6 OS
- Implemented a custom process scheduler (**Lottery Scheduling**) in the OS
- Implemented multiple new **system calls** for processes
- Github: xv6 With Paging

twitt3r — *A Twitter clone using the t3-stack*
- Framework: **NextJS**
- Stack: T3 (**Typescript, trpc, TailwindCSS**)
- Persistence: **PlanetScale, Prisma ORM**
- Deployment: **Vercel**
- Link: twitt3r
- Github: twitt3r

Student Scheduler — *An MVC JavaFX Schedule Management Software*
- Language: **Java**
- Libraries: **JavaFX**
- Database: **SQLite**
- Github: Student Scheduler

DocumentQA — *A langchain LLM document chatbot*
- Language: **Python**
- Libraries: **langchain, OpenAI**
- UI: **Chainlit**
- Database: **ChromaDB Vector Database**
- Github: DocumentQA