

Khondker Salman Sayeed

4th year Undergraduate Student in CSE, BUET

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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 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

Higher Secondary School

JULY 2016 - SEPTEMBER 2018

- GPA: **5/5**
- HSC Talent-pool **Scholarship** Recipient
- Ranked 114th on the Dhaka Board

St. Joseph Higher Secondary School

Secondary School

JAN 2008 - MAY 2016

- GPA: **5/5**
- SSC Talent-pool **Scholarship** Recipient
- Ranked 17th on the Dhaka Board
- 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

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](#)

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](#)

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: **FashAPI, MongoDB, Redis, BigQuery**
- Frontend: **React, MUI**
- Deployment: **Netlify**
- Link: [Pokedoc](#)

Sub-C Compiler — A compiler for a subset of the C programming language

- Tools: **Flex** (Lexer), **GNU Bison** (Parser)
- Language: **C, C++**

Suntech — An e-commerce web application

- Backend: **Flask, OracleDB**
- Frontend: **Jinja2, HTML, CSS, VanillaJS**

Ray-Tracing — A rendering pipeline implementing ray tracing in OpenGL scenes

- Language: **C++**
- Algorithms: **Phong Lighting Model, Recursive Reflection**
- Tool: **OpenGL**

Enhanced xv6 OS — Copy-On-Write and Memory Page-Replacement in the xv6 OS

- Language: **C**
- System Calls, Process Schedulers, Page Replacement

twitt3r — A Twitter clone using the t3-stack

- Framework: **NextJS**
- Stack: **T3 (Typescript, trpc, TailwindCSS)**
- Persistence: **PlanetScale, Prisma ORM**
- Deployment: **Vercel**
- Link: [twitt3r](#)

Student Scheduler — An MVC JavaFX Schedule Management Software

- Language: **Java**
- Libraries: **JavaFX**
- Database: **SQLite**

DocumentQA — A langchain LLM document chatbot

- Language: **Python**
- Libraries: **langchain, OpenAI**
- UI: **Chainlit**
- Database: **ChromaDB Vector Database**