Khondker Salman Sayeed

Senior Undergrad in CSE at BUET

Website 🌐   Github 🖤   LinkedIn 🔗   Scholar g

CONTACT

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WORK EXPERIENCE

Undergraduate Research Assistant, **CSE BUET NLP Lab**

APRIL 2023 - PRESENT

- Researching multimodal deep learning and Vision Language Models (VLM) for 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 for VLMs.
- Prepared a benchmark illusion dataset that tests the visual understanding capabilities of VLMs. (Currently under review at COLM'24)

Machine Learning Intern, **Northwest Power Generation Company**

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.
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Lead Organizer and Instructor, **DLSprint 2.0**

JUNE 2023 - AUGUST 2023

- Served as an organizer of this open-for-all Deep Learning Competition on 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.

PROGRAMMING LANGUAGES

- Python
- C/C++
- Java
- Javascript/Typescript

TECHNOLOGIES

- ExpressJS, React, NextJS
- Flask, FastAPI
- TailwindCSS, MUI
- MySQL, MongoDB, Redis
- Git
- Docker, Kubernetes
- Pytorch, Tensorflow

EDUCATIONAL BACKGROUND

Bachelor of Science in Computer Science and Engineering
Bangladesh University of Engineering and Technology

APRIL 2019 - MAY 2024

- 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

Higher Secondary School
Notre Dame College

JULY 2016 - SEPTEMBER 2018

- GPA: 5/5
- HSC Talent-pool scholarship recipient
- Ranked 114th on the Dhaka board

Secondary School
St. Joseph Higher 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

LANGUAGES

- English (Fluent)
- Bengali (Native)

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 Upsilon Pi Epsilon Honor Society Award 2023 ↗
Winner

Awarded by IEEE Computer Society
March 2024

- Received award based on academic excellence and extracurricular activities in the field of computing
- Awarded to only 5 applicants internationally
- Received a $1000 scholarship

IEEE Video and Image Processing Cup ↗
Champion

Hosted by IEEE Signal Processing Society, Georgia Institute of Technology
ICIP 2023, Kuala Lumpur, Malaysia
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 CSE BUET, Bengali.AI and 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 Datathon 2023 ↗
1st Runners Up

Hosted by EEE BUET, 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 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

○ **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

○ **IllusionVQA** — *A Challenging Optical Illusion Dataset for Vision Language Models*

- This work is a part of my undergraduate thesis
- Submitted to COLM'24 (under review)
- Paper: IllusionVQA: A Challenging Optical Illusion Dataset for Vision Language Models
- Website: IllusionVQA