

# Khondker Salman Sayeed

Senior Undergrad in CSE at BUET

Website  Github  LinkedIn  Scholar 

## CONTACT

[salkhon.github.io](https://salkhon.github.io)

SAU, Dhaka-1207, Bangladesh

[salkhon050@gmail.com](mailto:salkhon050@gmail.com)

## 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.

## 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

## PROGRAMMING LANGUAGES

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

## TECHNOLOGIES

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

## LANGUAGES

- English (Fluent)
- Bengali (Native)

## REFERENCES

- AKM Ashikur Rahman  
Professor at CSE, BUET  
[ashikur@cse.buet.ac.bd](mailto:ashikur@cse.buet.ac.bd)  
Relation: Advisor
- Rifat Shahriyar  
Professor at CSE, BUET  
[rifat@cse.buet.ac.bd](mailto: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 4 applicants internationally
- Received a \$1000 scholarship

### IEEE Video and Image Processing Cup 2023

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](#)