

Khondker Salman Sayeed

Software Engineer @ IQVIA

Website  Github  LinkedIn  Scholar 

WORK EXPERIENCE

Software Engineer, IQVIA

JUNE 2024 - PRESENT

- Working on the development and deployment of IQVIA's in-house Large Language Models for generating expert domain-specific insights.
- Increased a user-facing model's performance from 75% f1 to 90% f1 by moving from zero-shot to a RAG-based system.
- Working on maintaining the ML pipeline using Azure AI services, and AWS Bedrock.

Software Engineer, ResTechAI

JUNE 2024 - SEPTEMBER 2024 (Part-time)

- Leading the creation of an easy-to-use ML platform that delivers the LLM needs of the average professional.
- Designing a micro-service-based architecture using Docker Compose, and Kubernetes.
- Integrating tools like Ollama, LiteLLM, AnythingLLM, and Windmill to enable the creation of ML pipelines through a graphical UI.

Undergraduate Research Assistant, CSE BUET NLP Lab

APRIL 2023 - JUNE 2024

- Prepared a benchmark illusion dataset that tests the visual understanding capabilities of VLMs. (Published at **COLM'24**)
- 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.

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.
- 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.

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

CONTACT

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PROGRAMMING LANGUAGES

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

TECHNOLOGIES

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

RESEARCH

IllusionVQA: A Challenging Optical Illusion Dataset for Vision Language Models

- Accepted at *COLM 2024*.
- [\[arXiv\]](#) [\[webpage\]](#) [\[open review\]](#)

RNA-DCGen: Dual Constrained RNA Sequence Generation with LLM-Attack

- Accepted at *MLSB@NeurIPS'24*.
- [\[bioRxiv\]](#)

Too Late to Train, Too Early To Use? A Study on Necessity and Viability of Low-Resource Bengali LLMs

- Under review at *COLING 2025*.
- [\[arXiv\]](#)

Ophthalmic Biomarker Detection Using Ensembled Vision Transformers -- Winning Solution to IEEE SPS VIP Cup 2023

- Champion solution presented at *ICIP 2023*.
- [\[arXiv\]](#)

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 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](#)

DL Sprint 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.
FEBRUARY - 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](#)

Robi Datathon 3.0 2024

1st Runners Up

Hosted by Robi Axiata Ltd, Huawei
APRIL - MAY 2024

- Task: Customer Purchase Behavior Prediction
- Model: Random Forest Regressor, XGBoost
- Kaggle Qualifier Round: [Problem 1](#), [Problem 2](#), [Problem 3](#)
- Team Name: YellowKing

AI For Bangla 2023

Honorable Mention

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

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

PROJECTS

Ticketing — A microservices webapp that lets users buy and sell tickets

- Backend: NodeJS, Typescript, MongoDB, NATS Streaming. Consists of 6 independent services, coordinated by an event-based architecture.
- Frontend: NextJS, TailwindCSS
- Orchestration: Kubernetes

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

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

Mobile-Doc — A telemedicine web application

- Backend: FastAPI, MongoDB, Redis, BigQuery
- Frontend: React, MUI
- Deployment: Netlify
- Deployment: [Pokedoc](#)

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
- Deployment: [twitt3r](#)

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
- Published at **COLM'24**
- Paper: [IllusionVQA: A Challenging Optical Illusion Dataset for Vision Language Models](#)
- Website: [IllusionVQA](#)