

MD. TAUFIQUEL HAQUE KHAN TUSAR

AI ENGINEER · LLMs EXPERT

Gazipur 1750, Dhaka, Bangladesh

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Skills

Programming and Database	Python, PostgreSQL, MySQL, HTML5.
Machine Learning	PyTorch, TensorFlow/Keras, Transformers, NLTK, OpenCV, SK-learn, Pandas.
Back-end Development	Django, Flask, Celery, uWSGI, NGINX, Docker, Heroku/Render.
Additional	Git & GitHub, Hugging Face, Linux (Ubuntu), LaTeX.

Professional Experiences

NLP Engineer & Backend Developer

LaLoka Labs

May 2023 - present

Tokyo 110-0016, Japan (Remote)

- Development, fine-tuning, RAG, GPU utilization and prompt design of LLMs, notably for [kafkai.com](#).
- Developed and optimized backend features and workflows.

Research Engineer

Feb 2023 - March 2023

Advanced Intelligent Multidisciplinary Systems (AIMS) Lab, United International University

Dhaka 1212, Bangladesh

- Built backend and database for an AI-driven robot receptionist, integrating face, speaker & speech recognition, chatbot and TTS features.

Machine Learning Engineer (Internship)

July 2022 - Sept 2022

Shadhin Lab LLC

Dhaka 1219, Bangladesh

- Built an NLP-powered web extractor to automate data collection and categorization for an in-house SaaS, reducing processing time by 80%.

Educational Qualifications

Bachelor of Science (B.Sc.) in Computer Science & Engineering

City University

Apr 2018 - Nov 2022

Dhaka 1216, Bangladesh

Major: Software Engineering | CGPA: 3.21 out of 4.00 (First Class) | Medium of Instruction: English

Higher Secondary School Certificate (HSC)

2015 - 2017

Vasha Shaheed Abdul Jabbar Ansar VDP School & College

Gazipur 1751, Bangladesh

Group: Science | GPA: 4.25 out of 5.00

Research Works

- Bengali Voice based Bank Chatbot:** Developed an interactive voice enabled chatbot using automatic speech recognition, sentence transformers (paraphrase-mpnet-base-v2), and gTTS for the banking domain that listen and answers customers query. Facilitated by First Security Islami Bank, Bangladesh and supervised by Md. Ataulah Bhuiyan, Dept. of CSE, City University. Title: "An Artificial Intelligence Powered Bengali Voice Based Conversational Chatbot for Banking Sectors", pre-print doi: [10.13140/RG.2.2.17082.20169](#). (Oct 2023 - Jan 2024) - [GitHub](#).
- AI Receptionist:** Implemented the research methodology from "doi: [10.1109/ETCCE54784.2021.9689831](#)" to develop an AI Receptionist featuring speech, speaker & face recognition, chatbot, and TTS. Later, it was deployed in a university admission office, where 88% users (total 1664) expressing interest in real-life implementation. (Feb 2023 - Mar 2023) - [GitHub](#).
- Early Diagnosing Parkinson's Disease:** Experimented on Parkinson's Disease (PD) and REM Sleep Behavior Disorders (RBD) to detect PD at an early stage. Achieved 100% accuracy in classifying PD from RBD patients. Supervised by Md. Touhidul Islam, Dept. of CSE, City University. Title: "An experimental study for early diagnosing Parkinson's disease using machine learning", pre-print doi: [10.48550/arXiv.2310.13654](#). (July 2022 - September 2022) - [GitHub](#).
- Undergraduate Thesis:** Developed a vision-based automated leukemia subtypes detector using MobileNetV3, achieving 98% accuracy on microscopic images. Supervised by Md. Touhidul Islam, Dept. of CSE, City University. Title: "Automated detection of acute lymphoblastic leukemia subtypes from microscopic blood smear images using DNNs.", doi: [10.48550/arXiv.2208.08992](#). (Feb 2022 - Jul 2022) - [GitHub](#).

Publications

- M. T. H. K. Tusar** and M. T. Islam, "A Comparative Study of Sentiment Analysis Using NLP and Different Machine Learning Techniques on US Airline Twitter Data," 2021 IEEE International Conference on Electronics, Communications and Information Technology (ICECIT), Khulna, Bangladesh, 2021, pp. 1-4, doi: [10.1109/ICECIT54077.2021.9641336](#).
- M. T. Haque Khan Tusar**, M. T. Islam and F. I. Raju, "Detecting Chronic Kidney Disease (CKD) at the Initial Stage: A Novel Hybrid Feature-selection Method and Robust Data Preparation Pipeline for Different ML Techniques," 2022 5th IEEE International Conference on Computing and Informatics (ICCI), New Cairo, Cairo, Egypt, 2022, pp. 400-407, doi: [10.1109/ICCI54321.2022.9756094](#).
- J. Hossain, M. T. Islam, and **M. T. H. K. Tusar** "Streamlining Brain Tumor Classification with Custom Transfer Learning in MRI Images," 2023 IEEE Smart Information Systems and Technologies (IEEE SIST), Astana, Kazakhstan, 2023, pp. 522-526, doi: [10.1109/SIST58284.2023.10223507](#).
- M. T. H. Khan Tusar**, M. T. Islam, and A. H. Sakil, "An experimental study for early diagnosing Parkinson's disease using machine learning," Pre-print, 2023. doi: [10.48550/arXiv.2310.13654](#).
- M. T. H. Khan Tusar** et al., "An Intelligent Telediagnosis of Acute Lymphoblastic Leukemia using Histopathological Deep Learning," Journal of Computing Theories and Applications (JCTA), vol. 2(1), pp. 1-12, 2024. doi: [10.62411/jcta.10358](#).

Professional & Academic Engagements

Artificial Intelligence Mentor

The Empty Brain

- Led technical and executive teams on AI-driven startup ideas, achieving a top 25 placement in StartKoro S3 (a prestigious startup bootcamp).
- Mentored 10 undergraduates in python, machine learning techniques, research methodologies, and project execution.

June 2022 - March 2023

Dhaka 1212, Bangladesh

Undergraduate Research Assistant

Md. Touhidul Islam, Lecturer, Dept. of Computer Science & Engineering, City University

- Contributed to research projects by training and fine-tuning ML models, developing backend systems, and authoring research papers.
- Published research articles in natural language processing, image processing, and bio-informatics.

Dec 2020 - Nov 2022

Dhaka 1216, Bangladesh

JR. Machine Learning Engineer

Omdena

- Enhanced a real-time Smart Traffic system with computer vision to reduce congestion on urban motorways.
- Collaborated with a team of 50+ members from 20+ countries to collect and process traffic image data via APIs.

Dec 2022 - Feb 2023

CA 94301, USA (Remote)

Data Science Boot-camp Mentor

AI Planet (Formerly DPHI)

- Supported a 20 members team in running a data science bootcamp, creating final assessments and evaluating participant performance.

Sept 2021 - Oct 2021

Hyderabad, India (Remote)

Teacher

Milton English & Math Academy

- Tutored 30+ Higher Secondary School Certificate (HSC) students in ICT and physics, improving their academic performance by 50%.


Gazipur 1750, Bangladesh


Jan 2020 - Mar 2020


Conference Participations


- **Reviewer**, 3rd International Conference on Computing and Information Technology (ICCIT), 2023, Tabuk, Kingdom of Saudi Arabia.
- **Presenter**, 5th International Conference on Computing and Informatics (ICCI), 2022, Cairo, Egypt.
- **Presenter**, International Conference on Electronics, Communications and Information Technology (ICECIT), 2021, Khulna, Bangladesh.

Personal Projects

 **Privacy Aware RAG Agent** - Extracted wider public opinion (162K tweets) towards the national election and achieved 74% accuracy.

 **Bengali Speech Chatbot** - A Chatbot app that can perform Automatic Speech Recognition, Interaction Recognition, and Speech Synthesis.

 **Kidney Disease Diagnosis using Machine Learning** - An End-2-End ML pipeline that can early detect Kidney disorder with 100% accuracy. [\[webapp\]](#)

 **Blood Cancer Stage Detection using Image Processing** - Detected multi-patterned blast cells from microscopic images using MobileNet. [\[webapp\]](#)

Affiliations and Leadership

- **Member**, Google Machine Learning Community 11/2022 - 11/2023
- **Member**, IEEE Computer Society 08/2022 - 12/2022
- **Student Member**, Institute of Electrical and Electronics Engineers | IEEE 08/2021 - 12/2022
- **Executive Member**, City University Computer Club 12/2020 - 10/2022
- **Chapter Influencer**, Google Crowdsourcing 09/2021 - 06/2022
- **V-Force Volunteer**, United Nation Volunteer 08/2021 - 09/2021
- **Cadet**, Bangladesh National Cadet Corps | BNCC 08/2015 - 01/2017
- **Scout**, Bangladesh Scouts 01/2008 - 12/2009

Language Proficiency

English Professional | **Bengali** Native | **Hindi** Conversational | **Urdu** Conversational

References

Brig. General (Rtd) Prof. Dr. Engr. Md. Lutfor Rahman

Acting Dean, Faculty of Science & Engineering
Vice Chancellor, City University, Dhaka 1216, Bangladesh
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Dr. Rubens Talukder

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