

# MD. TAUFIQUEL HAQUE KHAN TUSAR

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## Skills

<b>Programming</b>	Python, C/C++, Bash, SQL, HTML/CSS
<b>Large Language Models</b>	Hugging Face Transformers, PEFT, Chroma, llama.cpp
<b>Large Language Models APIs</b>	OpenAI, Anthropic, Perplexity, JinaAI, Linkup, Guardrails, etc.
<b>Machine Learning</b>	PyTorch, TensorFlow, Keras, NLTK, OpenCV, Sklearn, Scikit-multiflow
<b>Data Analysis</b>	Pandas, Numpy, Matplotlib, Seaborn, Plotly
<b>Backend</b>	Django, Flask, Celery, Docker, Nginx, REST APIs
<b>Database</b>	PostgreSQL, SQLite, MySQL, Mapper: SQLAlchemy
<b>Production</b>	AWS (EC2, Lightsail, S3), Render, Heroku, Sentry
<b>Miscellaneous</b>	Linux, Multipass, LaTeX (Overleaf), Git & GitHub

## Experiences

### NLP Engineer & Backend Developer

LaLoka Labs

May 2023 - present

Tokyo 110-0016, Japan (Remote)

- Engineered and maintained LLM pipelines and backend systems for **KAFKAI V3**.
- Optimized LLMs efficiency using fine-tuning, PEFT, Quantization, RAG, etc.
- Streamlined GPU utilization and deployment workflows to support scalable LLM inference.

### Research Engineer

AIMS Lab, United International University

Feb 2023 - Mar 2023

Dhaka 1212, Bangladesh

- Developed the backend for a multi-modal AI receptionist integrating face, voice, and speaker recognition.
- Implemented the referenced research work (doi.org/10.1109/ETCCE54784.2021.9689831) into a real-world application.

### Machine Learning Intern

Shadhin Lab LLC

July 2022 - Sept 2022

Dhaka 1219, Bangladesh

- Developed NLP-based data classification and clustering models for an internal SaaS application.
- Automated data collection and labeling pipelines to accelerate large-scale web dataset preparation.

## Education

### Bachelor of Science in Computer Science & Engineering

City University

Apr 2018 - Nov 2022

Dhaka 1216, Bangladesh

- Thesis:** "Automated Detection of Acute Lymphoblastic Leukemia Subtypes from Microscopic Blood Smear Images Using Deep Neural Networks," doi: [10.48550/arXiv.2208.08992](https://doi.org/10.48550/arXiv.2208.08992)
- Major:** Software Engineering | **CGPA:** 3.21 / 4.00

## Publications

[1] **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](https://doi.org/10.62411/jcta.10358).

[2] **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](https://doi.org/10.48550/arXiv.2310.13654).

[3] 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](https://doi.org/10.1109/SIST58284.2023.10223507).

[4] **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](https://doi.org/10.1109/ICCI54321.2022.9756094).

[5] **M. T. H. K. Tusar** and M. T. Islam, "A Comparative Study of Sentiment Analysis Using NLP and Different ML 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](https://doi.org/10.1109/ICECIT54077.2021.9641336).

## Community Leadership

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### Community Lead

March 2025 - Present

AI/ML Professional Community Bangladesh

Bangladesh

- Coordinate community research programs with 25+ active contributors across LLMs, healthcare AI, and edge computing projects.
- Mentor early-career practitioners in project development and career pathways.
- Organize technical webinars and hands-on workshops on state-of-the-art AI/ML applications.

### Community Organizer

Jan 2025 - Present

Python Bangladesh

Bangladesh

- Organize tech meetups and collaborative events for Python developers across Bangladesh.
- Lead initiatives to restart PyCon Bangladesh, serving as the liaison between Python Asia and the local community.

### Artificial Intelligence Mentor

June 2022 - March 2023

The Empty Brain

Dhaka 1212, Bangladesh

- Led technical teams in a startup incubator, ranked at top 25 in StartKoro Season 3.
- Mentored 20+ undergraduates in python, machine learning, and research methodologies.









## Conferences

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- **Invited Speaker**, PyCon ID 2025, Jakarta, Indonesia (14-15 December 2025).
- **Reviewer**, EuroPython 2025, Prague, Czechia (14-20 July 2025).
- **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

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- **Python Buddy**: A Small Language Model-based Python Coding Assistant for low-resource devices. 
- **Inference API Server**: Lightweight Python API server for running inference on local/self-hosted LLMs. 
- **Privacy-Aware RAG**: RAG system for proprietary internal data in e-commerce services. 
- **Bengali AI Receptionist**: AI receptionist Flask app with STT, TTS, and face recognition. 
- **Blood Cancer Stage Detection App**: Deep Learning-based web app for ALL stage detection.  
- **Chronic Kidney Disease Diagnosis App**: Machine Learning-powered Flask app for early detection of chronic kidney disease.  

## Technical Blogs

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- PyBuddy: A Local-First LLM Coding Assistant for Everyone 
- Turn Your Android Device into a Remote Linux Server in 30 Minutes 
- Hacks to use Google Colab Free GPU on Local VS-code for Inference 
- EXAONE-3.5-2.4B: A Ultra-lightweight but High Performing LLM on Just 6GB GPU 
- Batch (Offline) Learning and Incremental (Online) Learning in Machine Learning 

## References

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### Kamal Mustafa

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Tokyo 110-0016, Japan  
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### Brigadier General (Rtd) Prof. Dr. Engr. Md. Lutfor Rahman

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