

SYED SAMIN SADAF

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OBJECTIVE

Passionate about technology, intelligence, and driven to tackle real-world challenges through innovation and critical thinking.

EDUCATION

B.Sc. in Software Engineering

2021 – 2025

Islamic University of Technology (IUT)

CGPA: **3.95 out of 4.00**

Higher Secondary Certificate (HSC)

2020

Notre Dame College, Dhaka

GPA: **5.00 out of 5.00**

EXPERIENCE

AI Engineer Intern

Kernel International Ltd. , May 2024 – September 2024

- Developed a **Retrieval-Augmented Generation (RAG)** pipeline for medical study support, integrating LLMs like GPT-4 and LLAMA with vector databases (MongoDB, ChromaDB).
- Implemented topic and subtopic mapping with a NoSQL structure to improve context-aware query resolution.
- Optimized embedding generation and storage mechanisms to support scalable retrieval for diverse medical subjects.
- Evaluated multiple embedding models (e.g., BGE, OpenAI, SentenceTransformers) for relevance and performance in medical QA tasks.
- Collaborated with a cross-functional team of frontend and backend developers to ensure seamless integration and delivery.

PUBLICATIONS

- **TYMBERT: Tiny Yet Mighty – Fine-Tuned and Compressed TinyBERT for High-Accuracy, Low-Resource NLP**
2nd International Conference on Next-Generation Computing, IoT and Machine Learning (NCIM 2025) (Full paper can be read here [ResearchGate](#))
 - Enhanced the performance of TinyBERT through advanced knowledge distillation techniques and applied quantization methods to reduce model size while maintaining accuracy.
 - Conducted extensive benchmarking against other BERT variants to validate effectiveness.
- **A Survey to Understand the experience of ChatGPT Usage among Engineering University Students in Bangladesh.**
Technium Journal (2023) (Full paper can be found here [Academia.edu](#))
 - Contributed to designing the survey and collecting participant data
 - Conducted analysis of user responses to identify key insights

PROJECTS

- **The Red Owl - Connect IUTians Worldwide**

[GitHub Link](#)

Node.js, Express.js, MongoDB, React.js

Built a platform to connect teachers, students, and alumni of IUT:

- Developed user profiles, authentication, and email verification.
- Implemented search and advanced filters for profiles, events, and blogs.

- **CollaborativeChatGPT**

[GitHub Link](#)

FastAPI, Next js, MongoDB

Created a tool for collaborative interaction with ChatGPT:

- Added error categorization and response correction.
- Integrated ChatGPT API for iterative feedback and model improvement.

- **Rong- An Event Management Website**

[GitHub Link](#)

React js, Node js, Express js, MongoDB

Worked on a 3-person team to build an event management website:

- Built customer profile along with email verification, booking tickets
- Customer review section
- Made the payment gateway using the Stripe API

SKILLS

Programming Languages	Python, JavaScript, C, C++, Java, C#
Backend Development	Node.js, Express.js, Django, FastAPI
Machine Learning	NumPy, Scikit-learn, TensorFlow, PyTorch, Pandas
DevOps	Docker, CI/CD, GitHub Actions, Nginx, Git
Other Tools	LangChain, Ollama

CERTIFICATIONS

Deep Learning Specialization — Coursera

[Certificate link](#)

Issued: March, 2024

- Developed a strong foundation in neural networks, deep learning, and optimization techniques.
- Implemented forward and backward propagation, mini-batch gradient descent, and vectorized computations using Python and NumPy.
- Learned practical aspects of training deep models: hyperparameter tuning, initialization, and regularization (L2, dropout).
- Covered key applications: image classification, sequence models, word embeddings, and machine translation.

EXTRA-CURRICULAR ACTIVITIES

- **Competitive Programming:** Actively participated in competitive programming contests on [Codeforces](#) (peak rating: 1070) and consistently solved algorithmic challenges on [LeetCode](#) to strengthen problem-solving skills.
- **Capture The Flag (CTF):** Achieved 5th place in CodeRush 1.0 (IUT Intra-CTF) and participated in multiple inter-university and international online CTF competitions, gaining hands-on experience in cybersecurity, reverse engineering, and digital forensics.
- **Machine Learning:** Competed in the BLP (Bangla Language Processing) Shared Task on Bangla Hate Speech Detection under ACM, achieving a 0.697 micro-F1 score (top performance: 0.736). Gained practical experience in NLP model development, data preprocessing, and model evaluation for real-world text classification tasks.

REFERENCES

Sabbir Ahmed

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