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Uttara, Dhaka-1230, Bangladesh

EDUCATION

North South University

Bachelor of Science in Computer Science and Engineering
CGPA: 3.85/4.00 | Merit Scholarship (Top 1% of class)

Sep 2021 – Present
Dhaka, Bangladesh

PROJECTS

AI Doctor Assistant (SaaS Web Application) / *Next.js, TypeScript, NEON PostgreSQL, Clerk, Drizzle ORM, VAPI, OpenRouter AI*

- Built a **voice-powered medical consultation platform** providing real-time, AI-driven healthcare assistance
- Implemented **LLM-based symptom analysis** to suggest suitable doctors and enable **natural doctor-patient conversations**
- Integrated **VAPI Voice Assistant** with OpenRouter AI for real-time speech understanding and interaction
- Designed automatic **medical report generation** including patient details, symptoms, prescriptions, advice, and session summary
- Secured platform with **Clerk authentication** and managed scalable data operations using **NEON PostgreSQL + Drizzle ORM**
- Structured with SaaS-ready architecture, featuring dashboards, doctor listings, pricing, health tips, and contact pages
- Deployed on **Vercel** for seamless performance, modern UI, and scalable cloud readiness
- Project GitHub: [AI Doctor Assistant GitHub](#)
- Live Demo: [AI Doctor Assistant Website](#)

TimeClipAI: Real-Time Action Classification and Time Segmentation / *PyTorch, Anchor Transformers, I3D, Python, Git*

- Developed **TimeClipAI**, a framework for **online temporal action localization** using Anchor Transformers
- Enabled **real-time action classification and time segmentation** in full-length videos
- Integrated support for multiple benchmark datasets including **EGTEA, EPIC-Kitchen 100, THUMOS'14, and CricShot10**
- Leveraged pre-trained **I3D features** for efficient training and testing
- Designed and trained a **post-processing Offset Scoring Network (OSN)** to refine predictions
- Achieved state-of-the-art performance with robust generalization across datasets
- Open-sourced implementation with full pipeline: [github.com/sazzadadib/CSE499-TimeClip_AI](#)

DeshiPlate AI: Bangladeshi Food Recognition & Nutrition Assistant / *Next.js, TypeScript, NextViT, PyTorch, NEON PostgreSQL, Drizzle ORM, OpenRouter AI*

- Developed an **AI-powered food recognition system** specialized in **33 traditional Bangladeshi dishes**
- Created and curated a **custom dataset of Bangladeshi cuisine** for training the NextViT classification model
- Implemented **NextViT deep learning architecture** achieving **89.76% accuracy** on food classification tasks
- Built real-time **inference engine** enabling users to upload food images and receive instant AI-driven insights
- Integrated **personalized nutrition recommendations and health suggestions** based on classified food items
- Managed scalable data operations using **NEON PostgreSQL + Drizzle ORM**
- Deployed on **Vercel** with modern, responsive UI for seamless user experience
- Project GitHub: [DeshiPlate AI GitHub](#)
- Live Demo: [DeshiPlate AI Website](#)

Educational Chatbot using RAG / SLMs, Python, Ollama, LangChain, HuggingFace, FastAPI, Prompt Engineering, Git

- Developed lightweight SLM-based chatbot for offline, device-efficient use
- Designed user-friendly web interface for better accessibility
- Achieved 75% accuracy on 4,000-question dataset using RAGChecker
- Enabled accessible learning for underserved communities

Road Accident Analysis System / Python, Scikit-learn, NumPy, Pandas, Git

- Predicted patient status and injury type using Road Traffic Accident Dataset
- Compared Logistic Regression, Decision Tree, SVM, XGBoost, Random Forest
- Achieved 99.1% accuracy for status, 89% for injury type
- Improved emergency response through data-driven insights

Agile-Driven Movie Reservation Website / Node.js, React, MongoDB, Postman, Jest, Trello, GitHub Wiki, JSDoc, Git

- Developed scalable website with 5-member team using Agile Scrum
- Contributed to frontend/backend with MVC architecture
- Documented codebase with JSDoc for maintainability
- Ensured reliability with Jest unit tests

Viper Travel Booking Website / PHP, MySQL, JavaScript, CSS, Git

- Built travel booking site with dynamic SQL-based CRUD API
- Implemented end-to-end booking features
- Delivered seamless user experience for efficient travel planning

PUBLICATIONS

Z-Pruner: Post-Training Pruning of Large Language Models for Efficiency without Retraining

Samiul Basir Bhuiyan, Md. Sazzad Hossain Adib, Mohammed Aman Bhuiyan, Muhammad Rafsan Kabir, Moshiur Farazi, Shafin Rahman, and Nabeel Mohammed

Accepted at IEEE AICCSA 2025

 arxiv.org/abs/2508.15828  github.com/sazzadadib/Z-Pruner

DOMAIN OF INTEREST

Applied AI and Machine Learning:

- Temporal Action Localization in Videos
- Efficient LLM Deployment (Pruning, Quantization)
- Retrieval-Augmented Generation (RAG) Systems
- Small Language Models for Edge AI

Full-Stack & Scalable Systems:

- MERN Stack and API Development
- Agile-Based Scalable Web Applications
- AI-Integrated Web Interfaces
- Cloud-Ready ML Pipelines

SKILLS

Languages & Frameworks: Python, JavaScript, C/C++, PHP, Java, Node.js, React.js, Next.js, Flask, FastAPI, Express.js

Machine Learning & AI: PyTorch, Scikit-learn, HuggingFace Transformers, LangChain, LLamaIndex, Ollama, RAG, LLM/SLM Fine-tuning, Pruning, Prompt Engineering

Data & Visualization: Pandas, NumPy, Matplotlib, Seaborn, OpenCV

Database & DevOps: PostgreSQL, MySQL, MongoDB, REST APIs, Git

Tools & Productivity: GitHub, Trello, JSDoc, MS Word, Excel, PowerPoint

REFERENCES

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