

Abhilekh Borah

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EDUCATION

Manipal University Jaipur

2022-2026

Bachelor of Technology in Computer Science and Engineering

Jaipur, Rajasthan

- **CGPA: 8.9/10.0** (Till 4th Semester); Dean's List; Student Excellence Award
- **Relevant Coursework:** Data Structures and Algorithms, Object Oriented Programming, Computer System and Architecture, Data Communication, Statistics

EXPERIENCE

Summer Research Intern

May 2024 – Present

Indian Institute of Technology, Guwahati

Guwahati, Assam

- Developed a **Continuous Sign Language Recognition and Translation Framework**, achieving up to **30%** improvement in ROUGE and BLEU scores compared to state-of-the-art methods.
- Implemented a **Video-to-Gloss** model using CNN and Bi-LSTM, and a **Gloss-to-Text Retrieval System** using LLM for natural language understanding and generation.
- Integrated an **Emotion** model based on the valence-arousal theory to classify emotions in sign language videos, and used a **Text-to-Speech** module with WaveNet and Tacotron to synthesize emotion-captured text into audio.

Research Intern

Jan. 2023 – Jun. 2024

Indian Institute of Information Technology, Allahabad

Prayagraj, Uttar Pradesh

- Developed a **Crowd Anomaly Detection** framework for analyzing crowd behaviors and detecting anomalies in video footages using LSTM and ConvNets, classifying video segments into seven real-life distinct crimes.
- Achieved a **96.15%** AUC score in anomaly detection, significantly reducing false positives.

Research Intern

Oct. 2023 – Jun. 2024

Indian Institute of Science Education and Research, Kolkata

Kolkata, West Bengal

- Developed a novel **Ayurveda Retrieval Framework** using Gemini Pro and RAG, achieving **77.01%** higher accuracy compared to baseline LLMs.
- Correlated patient-like representations with Ayurvedic medical data to predict diseases based on symptoms (Doshas, Dhatus, Srotas).
- Utilized a curated dataset from Ayurvedic institute doctors, ensuring the framework's novelty and domain-specific relevance.

PROJECTS

[AcharyaGPT](#) | *Conversational AI, LLMs*

- An iOS chatbot developed using OpenAI's **GPT-3.5 Turbo**, fine-tuned on our dataset, for Ayurvedic consultations with context-aware dialogue management.
- Integrated a domain-specific knowledge base, allowing the LLM to deliver accurate and personalized Ayurvedic formulations and instructions.

[GyanSrota](#) | *Information Retrieval, Agents, LLMs*

- A web-based chatbot that provides answers about academic and campus-related topics.
- It uses a retrieval pipeline with **Langchain** for **RAG**, **Gemini 1.5 Pro** for response generation, and buffer memory for context retention.
- Employed **Agents** to extract relevant information from the university's corpus ensuring accurate and context-aware responses to user queries.

TECHNICAL SKILLS

Languages: Python, C/C++, Swift, Java

Areas of Interest: Information Retrieval, Conversational AI, Multimodal Interaction, Cognitive Modelling, AI for Social Good

Frameworks: LangChain, LangGraph, LlamaIndex, PyTorch, Tensorflow, NLTK, Transformers, OpenCV, Scikit-learn, SwiftUI, RealityKit, ARKit

Developer Tools: Git, Google Cloud Platform, VS Code, Jupyter Notebook, Xcode