

AYANTANU LAHA

MSc. Student | BSc. in Computer Science

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Portfolio Website

RESEARCH INTEREST

Retrieval-Augmented Generation (RAG) & Multilingual RAG, Multimodal LLM, Machine Learning, Deep Learning, and Algorithm Design.

ONGOING PROJECT

- **Enhancing Bilingual Information Retrieval with Neo4j**
 - **Tools & Technologies:** Python, Pandas, Numpy, Neo4j, Vector DB, Langchain, Hugging Face, Llama3
 - Developing a bilingual Retrieval-Augmented Generation (RAG) system using Neo4j, which will enable queries in Bengali or English and deliver relevant answers from documents in both languages. The project focuses on creating relational mappings between Bengali and English documents.

PROJECTS

- **Ensemble Learning Strategies for Enhancing Predictive Models in Cardiology**
 - **Tools & Technologies:** Python, Pandas, Numpy, Matplotlib, Scikit-learn, Kaggle, Stacking classifier.
 - Enhanced cardiology diagnostics using ensemble learning (stacking) in Python, combining multiple models to improve prediction accuracy and robustness.
- **PDF Genius: Empowering Document Interaction with AI Chatbot**
 - **Tools & Technologies:** Python, Flask, React JS, MySQL, llama-2.
 - Developed a chatbot with NLP to extract information from PDFs and integrated a React JS UI for enhanced interaction. Implemented search history and quota management to track queries and manage document access efficiently.
- **Movie Recommendation System using Streamlit**
 - **Tools & Technologies:** Python, Pandas, Numpy, Streamlit.
 - Built a movie recommendation system using collaborative filtering and Streamlit, with data processing in Pandas. Integrated TMDB API for movie data and posters, allowing users to get personalized recommendations based on their preferences and movie similarities.

EDUCATION

MSc in Computer Science

Ramakrishna Mission Vivekananda Educational and Research Institute

2023 – Present

Belur, India

CGPA 9.25/10

BSc in Computer Science

Ramakrishna Mission Residential College (Autonomous), Narendrapur

2020 – 2023

Kolkata, India

CGPA 9.61/10

Higher Secondary (10+2)

Dhaniakhali Mahamaya Vidyamandir

– 2020

Dhaniakhali, India

Percentage 93.2%

Secondary (10)

Dhaniakhali Mahamaya Vidyamandir

– 2018

Dhaniakhali, India

Percentage 91.8%

EXPERIENCE

3-Day Workshop on Medical Data Analysis using Python

Indian Statistical Institute, Kolkata

June 2024

Kolkata, India

Gained practical skills in Python programming for analyzing medical datasets, enhancing proficiency in data analysis for healthcare applications.

6th Summer School on AI

International Institute of Information Technology Hyderabad (IIITH)

Sept 2018 - Feb 2019

Odisha, India

Covered various topics in AI, providing valuable insights and knowledge in Computer Vision, Deep Learning, and Machine Learning.

TECHNICAL SKILLS

- **Programming Languages:** Python, C++, HTML, CSS, JS, React JS
- **Tools & Technologies:** MySQL, Neo4j
- **Libraries & Frameworks:** NumPy, Pandas, Scikit-learn, NLTK, Pytorch, Flask, Streamlit