Ayantanu Laha

Serampore, West Bengal 712201
9476169407 ayantanulaha@gmail.com linkedin github portfolio

Education

Ramakrishna Mission Vivekananda Educational and Research Institute **Howrah, India**
M.Sc in Computer Science *2023 – 2025*

Ramakrishna Mission Residential College, Narendrapur **Kolkata, India**
B.Sc in Computer Science *2020 – 2023*

- CGPA: **9.61/10.0**

Relevant Coursework

- Data Structures
- Algorithms Analysis
- Advanced Algorithms
- Graph Theory
- Database Management
- Machine Learning
- Deep Learning
- NLP

Experience

SenSight Technologies Private Limited **January 2025 – Present**
Software Engineer Intern *Bangalore, India*

- Developing a notification system for the **AutoBeacon app**, a smartphone sensor-based safe driving technology that enhances customer engagement and promotes safe driving behavior.
- Working with **Django, Streamlit, Python**, and **REST APIs** to improve the app's functionality and ensure seamless integration.
- Using **Google BigQuery** and **Looker Studio** to enhance the dashboard system of the AutoBeacon app.

Publications

Blind Image Authentication Using SVD with Enhanced Robustness by Augmenting Hamming Code **2024**

- Developed a blind image authentication technique using **Singular Value Decomposition (SVD)** and **Hamming code** for enhanced robustness.
- Achieved high imperceptibility and robustness under various attacks, with PSNR of 36.98 dB (SIPI dataset) and 52.7 dB (X-Ray dataset).
- Demonstrated strong robustness against attacks like Salt-and-Pepper Noise (SAPN), Gaussian Noise (GAUN), Cropping (CRP), Median Filtering (MF), Histogram Equalization (HEQ), and JPEG Compression (JPC).
- **DOI:** 10.1080/1206212X.2024.2408748

Projects

Ensemble Learning Strategies for Enhancing Predictive Models in Cardiology

- **Tools & Technologies:** Python, Pandas, NumPy, Scikit-learn, Kaggle, Stacking, Bagging, Boosting.
- Implemented Stacking, Random Forest, SVM, and KNN classifiers, using majority voting for robust predictions.
- The final model achieves an accuracy of 93.68%, 99.12%, 98.45%, and 74.32% for Dataset 1, Dataset 2, Dataset 3, and Dataset 4, respectively.
- **Link to Project:** GitHub

RAG-Enhanced Cross-Lingual Information Retrieval: Bridging Bilingual Query Gaps and Streamlining Search

- **Tools & Technologies:** Python, Pandas, NumPy, FAISS DB, Hierarchical Navigable Small World (HNSW) Algorithm, Hugging Face, LLaMA 3.
- Developing a cross-lingual Retrieval-Augmented Generation (RAG) system using FAISS DB to handle Bengali and English queries. Enabled retrieval of relevant answers from bilingual documents and created relational mappings between Bengali and English content.
- **Link to Project:** GitHub

Technical Skills

Languages: Python, C++, C
Frameworks/Technologies: Django, Django REST Framework, Streamlit, Linux
Database: SQL, Google BigQuery, Lookup Studio

Hobbies and Languages

Hobbies: Football, Drawing, Coding
Languages: English, Bengali, Hindi