

Aritro Shome

+91-9073989733 | aritra.shome.official@gmail.com | [LinkedIn](#) | [GitHub](#)

EDUCATION

Indian Institute of Engineering Science and Technology

Bachelor of Technology in Information Technology - CGPA 8.94

Shibpur, West Bengal

Aug. 2024 – May 2028

M. P. Birla Foundation Higher Secondary School

Secondary and Higher Secondary Schooling - ISC (Class 12) 95.3%, ICSE (Class 10) 98.3%

Kolkata, West Bengal

April 2010 – May 2024

Inspire Scholarship

Selected for Inspire Scholarship by Govt. of India

Government of India

May 2024

PROJECTS

ML and NLP from Scratch | *Python, NumPy, PyTorch, Pandas, NLTK* | [ML Notebook](#) & [NLP Notebook](#) Jan–Mar 2025

- Faced the challenge of learning ML and NLP fundamentals without black-box abstractions.
- Set the goal to build key algorithms from scratch to reinforce conceptual understanding.
- Implemented Linear/Logistic/Softmax Regression, KNN, K-Means, MLP, Bag-of-Words, TF-IDF, CBOW, SkipGram, and Byte-Pair Encoding using NumPy and PyTorch.
- Developed Naïve Bayes and LSTM-based sentiment classifiers and thoroughly studied tokenization research papers to ensure depth.
- Achieved strong theoretical clarity and hands-on confidence in implementing complete ML/NLP pipelines from first principles.

Role of AI in Material Science Research | *Data democratization, theoretical concepts* | [Link to the paper](#)

- Identified the growing relevance of AI in materials discovery and predictive modeling.
- Authored a paper proposing AI-based statistical techniques to accelerate material innovation.
- Won 1st Place at Professor Brahma Prakash Memorial Material Science Paper Presentation 2023, held at IGCAR, Kalpakkam.
- Demonstrated potential societal and industrial benefits of interdisciplinary AI applications.

Vidvaan - AI powered Research Paper Aggregator | *Python, Flask, Firebase* | [Project Link](#) January 2025

- Noticed the difficulty in finding relevant academic content quickly across platforms.
- Built a unified aggregator pulling papers from DBLP, ArXiv, OpenLibrary, and OpenAlex.
- Integrated Google Gemini to provide real-time AI-based summarization of papers.

Predicting the 2025 IPL Winner | *Python, Scikit-Learn* | [Repository Link](#) March 2025

- Explored how data science could be applied to sports prediction and fan engagement.
- Built models including Decision Trees, Random Forests, MLP Classifiers, and Monte Carlo simulations.
- Performed comprehensive EDA and model evaluation to maximize prediction accuracy.
- Won BrainDead 2025 Hackathon organized by the CST Department, IIST Shibpur.

Abler (Winner - SXC eXabyte Hackathon) | *GitHub: [TheSopranos](#) | Video: [Watch Here](#)* January 2025

- Built a real-time accessibility assistant with object detection, depth estimation, and speech/gesture recognition.
- Addressed accessibility gaps for the visually impaired using multimodal AI systems.

Applied AI/ML Projects and Tooling | *GitHub: [AI/ML Works](#), [SMS Spam Classifier](#), [Where Am I?](#), [MentL](#), [RawDawg](#)*

- Curated a diverse portfolio of AI/ML experiments including RNN-based music generation, social media engagement prediction, and image filter design.
- Built frontends and documentation to improve accessibility of ML models (e.g., PPG encoder, SMS spam classifier); awarded at Tensor Quest, Instruo 2025.
- Developed several web-based interactive tools including **Where Am I?**, a geography-based guessing game: [Play Here](#).
- Won Best Design Award at Hacknoware 2025 for **MentL**, a mental wellness assistant with emphasis on clean UX and technical depth.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, Javascript, HTML/CSS

Frameworks: Flask, Numpy, Pandas, Pytorch, Scikit-Learn, Matplotlib

Developer Tools: Git

Certifications: [Deep Learning Specialization](#), [Convolutional Neural Networks \(ResNet, AlexNet, LeNet, U-Net\)](#), [Sequence Models \(RNNs, LSTMs, GRUs, Transformers\)](#), [Structuring ML Projects \(Cross-Validation, Bias Variance Tradeoff\)](#), [Improving Deep Neural Networks with Hyperparameter Tuning, Regularization and Optimization \(Adam, Momentum\)](#), [Develop GenAI Apps with Gemini and Streamlit](#), [Prompt Designing using Vertex AI Studio and Google Gemini](#), [Analyze Images with Google Cloud Vision API](#), [Google Cloud Speech API](#), [Google Cloud Storage](#), [Google App Engine](#), [Monitoring in Google Cloud](#), [Networking Fundamentals on Google Cloud](#)