RIJUSMIT BISWAS

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EDUCATION

Bachelor of Technology (Computer Science), IIIT-Delhi   Aug 2022 – Present
Major in Economics: Microeconomics, Econometrics, Validation and Portfolio Management

Relevant Coursework: Natural Language Processing, Statistical Machine Learning, Machine Learning, Spatial Statistics & Econometrics, DBMS, Information Integration & Applications, Operating Systems.

SKILLS

Languages	Python, C++, C, JavaScript, TypeScript, SQL
Tools and Frameworks	PyTorch, scikit-learn, Hugging Face (Transformers, Datasets), PEFT, Unsloth, LangChain, Next.js, React, Express, Django, FastAPI, Flask, OpenCV, Weights & Biases, Docker, Git/GitHub & GitHub Actions, Jupyter/Google Colab, Kaggle, Vector DBs (Pinecone, FAISS), PostgreSQL, MySQL, MongoDB, Elasticsearch, Firebase, Docker
Technical Skills	Full-Stack Development, Machine Learning, Natural Language Processing, Computer Vision, EDA, Spatial data analysis, Data Science, Data Structures and Algorithms
Soft Skills	Technical writing, Mentoring, Research & Experimentation, Problem Solving.

EXPERIENCE

Machine Learning Intern — MIDAS Lab (Advisor: Dr. Avinash Anand)   May 2025 – Present
IIIT-Delhi   *New Delhi, India*

- Fine-tuned small LLMs (Qwen 2.5, Llama 3.2) to reduce bias, hallucination, and jailbreak risk using adversarial/red-team datasets, demographic balancing, and decoding-time safety filters.
- Built evaluation pipelines for refusal/robustness checks and prompt-based safety tests; iterated decoding strategies for safer responses.
- *Stack:* Python, PyTorch, Transformers, PEFT, Unsloth, BitsandBytes, Huggingface datasets.

Data Science Intern — CSS (Econometrics) Lab (Advisor: Dr. Gaurav Arora)   Jan 2025 – May 2025
IIIT-Delhi   *New Delhi, India*

- Expanded the SICKLE dataset with ground-level observations; aligned with multi-sensor satellite imagery (Sentinel-1/2, Landsat-8; 2018 Rabi) for crop classification, phenology, and yield prediction in Andhra Pradesh.
- Automated geospatial alignment/quality checks and feature extraction to streamline modeling.
- *Stack:* Python, GeoPandas, rasterio, NumPy, Sentinel-Api, Google Earth annotation tools, Pytorch, ArcGis

Data Science Intern — Complex Systems Lab (Advisor: Dr. Ganesh Bagler)   Aug 2024 – Dec 2024
IIIT-Delhi   *New Delhi, India*

- Built and experimented with multiple ML models to classify **25** molecular food categories; performed spatial statistical EDA to surface key signals for downstream analytics.
- Improved the older codebase for the online book companion by adding graphs, heatmaps, and used models like random forest classifiers to correctly handle large countries' data with Geoplots.
- *Stack:* Python, PyTorch, scikit-learn, pandas, geopandas, NumPy, Plotly, HTML, CSS, JS

Open Source Contributor — Layer5(Meshary, Docs) (Advisor: Mr. Lee Calcote)   Aug 2024 – Dec 2024
Layer5 (LFX)   *Remote*

- Use Meshary Kanvas to Diagram the image component into an interactive design and merged it with the code base in Hugo with multiple markdown and shortcodes.

- *Stack:* Hugo, HTML, CSS, Meshary Kanvas, JS

PROJECTS

MineMEETs — Meeting Intelligence RAG Pipeline ([GitHub](#)).

- Designed a dual-model RAG pipeline (retriever + generator) to process 30K+ token meeting transcripts with summarization, chunking, re-ranking, and contextual Q&A.
- Implemented CPU-only Whisper + Llama-3 transcription achieving ¡2 min/hr audio and FAISS-backed RetrievalQA with ¡5s latency for fast search.
- Deployed a Streamlit application providing real-time meeting insights, structured summaries, and Q&A to improve team productivity.
- *Stack:* Python, Hugging Face Transformers, FAISS, Streamlit.

Quench++ — Benchmarking LLMs on IndicQA ([Kaggle](#)).

- Extended QUENCH benchmark with bias-injected data and manual reasoning/cause–effect annotations using Qwen to better evaluate LLM robustness.
- Achieved BERTScore 0.7–0.8 and max BLEU 0.07, exposing strengths and limitations of LLMs on Indic languages and reasoning tasks.
- Released reproducible Kaggle notebooks and evaluation framework to support research in multilingual fairness and reasoning.
- *Stack:* Python, Hugging Face Transformers / Databases, Qwen, BLEU, BERTScore.

WasteSage — Waste Disposal & Query Portal ([GitHub](#)).

- Built a full-stack React + Flask assistant that detects waste using MobileSSD-powered image classification. Integrated a context-aware chatbot to deliver region-specific eco-friendly waste disposal guidelines.
- *Stack:* React, Flask, Python, CNN, Geolocation APIs.

EcoMind — Agentic Plant-Care Assistant ([GitHub](#)).

- Developed a FastApi + LangChain conversational agent that learns user preferences and generates adaptive plant-care routines.
- Integrated real-time horticulture data to personalize recommendations based on season, soil type, and watering needs.
- Increased beta engagement by $\tilde{3}5\%$ with sub-500ms response times, improving usability for home gardeners.
- *Stack:* FastAPI, LangChain, Python, Ollama

EXTRA-CURRICULAR ACTIVITIES

- Head of Web Development, Cyfuse — led club website build and live event pipeline (Jan 2025 – Sep 2025).
- Lead AI Agent Developer, Navsrujan Innotech Foundation — social awareness projects for AI use (May 2025 – Aug 2025).
- Certifications: Deep Learning Specialization; Machine Learning Specialization; Achivements: HackerRank 5-star; Codeforces 1403, Leetcode 1500+ rating.

LEADERSHIP

- Head of WebDev at Student Council., IIIT-Delhi Academics & Student Council — event approval pipeline & portal (Aug 2025 – Present).