SUBARNO MAJI

Indian Institute of Technology Kharagpur

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EDUCATION

Year	Degree/Exam	Institute	CGPA/Percentage
2026	B.Tech, Electrical Engineering	Indian Institute of Technology, Kharagpur	8.53/10
2022	Class XII, CBSE	The Assembly of God Church School, Purulia	95.0%
2020	Class X, CBSE	The Assembly of God Church School, Purulia	97.0%

PROJECTS & INTERNSHIPS

Stimuler | AI Engineer   *Oct 2025 - Dec 2025*
- Architected LoRA / PEFT finetuning pipeline for Qwen2.5-Omni-3B on Modal cloud with synchronized seed controls
- Developed Unsloth PEFT compatibility patches for Omni thinker-talker architecture enabling LoRA gradient flow and embedding delegation
- Implemented automated evaluation framework using a structured 9-point rubric, and system-prompt caching to reduce latency and costs

Morgan Stanley | Summer Associate | Letter   *May 2025 - Jul 2025*
- Built cashflow models in Excel for ABS deals backed by Aircraft and Dark Fibre leases, covering lending and securitization structuring
- Analyzed asset side cashflows through stratification, default and delinquency modeling, re-leasing timelines, and disposition stress testing
- Derived tranche sizing and liability waterfall, embedding DSCR and LTV-based structural triggers to strengthen credit protection
- Estimated pricing using projected cashflow and performed stress case analysis to assess downside risk to asses lending & investment viability

InterIIT Techmeet 13.0 (GOLD) | High Prep Contingent Member - Pathway | Letter   *Oct 2024 - Dec 2024*
- Designed REEF, a multi-agent RAG pipeline for financial and legal research with hybrid search, multi-hop analysis and contextual retrieval
- Achieved 87.5% retrieval precision and 91.3% question-answering accuracy on benchmark datasets like Form 10-K, Form 10-Q, and CUAD.
- Developed Lang framework for task orchestration, adaptive planning and dynamic response synthesis to optimize query workflows
- Automated equity research, compliance check and valuation analyses with optimized cost and latency using domain-specific agentic pipelines

Indian Institute of Management, Bangalore | Research Intern | Letter   *Nov 2023 - Jan 2024*
- Leveraged matching techniques to reconcile inconsistent firm names, organized the data by refining text features with clustering methods
- Utilized fuzzy matching algorithms such as Levenshtein Distance for merging and n-gram vectorization to generate clustering vectors
- Applied K-means,Hierarchical Clustering,and DBSCAN algorithms,achieving the highestsilhouette score of 0.43 with K-means clustering

Chi SquareX | Machine Learning Engineer | Letter   *Dec 2023 - Jan 2024*
- Developed an automated human image cropping tool using fine-tuned segmentation models, deployed on Gradio for interactive use
- Achieved a Dice score of 0.942, for precise binary mask segmentation using LinkNet with ResNet34 encoder pretrained on ImageNet
- Developed a social media outreach bot using GPT-4, Selenium, and Tkinter for data extraction, interactive GUI, and automated messaging

COMPETITION & CONFERENCES

Global Top 3 | CoreNet Global Academic Challenge 17 Singapore | Certificate   *CoreNet Global*
- Invited to Singapore for the Global Finals at the 2025 Corenet Global Summit, being one of the top 3 teams in the entire APAC region
- Accomplished a 26.8% reduction in operational costs by deploying predictive maintenance pipeline for time-series state classification

National Winner | Convolve 2.0-PAN IIT Hackathon | Certificate   *IDFC First Bank & IIT Bombay*
- Winner among 1600 teams for developing a high-performance fraud detection framework, achieving 99.71% accuracy and 93.01% F1 score
- Implemented feature selection and encoding pipelines grouping, discretization and variance thresholding to optimize data representation.
- Devised hyperparameter search via Optuna, ROC-driven decision threshold calibration, and SHAP-based feature attribution dashboard

National Winner | Empower Student Design Challenge 2023 | Certificate   *IIT Madras Research Park &NISH*
- Winner among 110 teams for inventing an assistive belt for hearing-impaired enhancing safety with horn detection and vibrational cues
- Implemented Mel-Spectrogram-CNN classifier achieving 96.43% accuracy on the HornBase dataset with an inference time of 7.38 ms
- Developed a novel detection algorithm using EWMA of sound's RMS energy with two levels of smoothing for distinct impulse responses

National Winner | Claim Span Identification Challenge   *International Conference on Pattern Research 2024*
- Developed a model to identify claim spans in social media posts accurately detecting specific text segments corresponding to the claims
- Finetuned XLM-RoBERTa with feedforward on hidden states leveraging multisampling dropout for accelerated training and regularization
- Achieved Macro F1 scores of 75.2 (English) and 78.6 (Hindi), and Jaccard scores of 58.9 (English) and 64.2 (Hindi) on the validation set

AWARDS & ACHIEVEMENTS

- Awarded the prestigious KVPY Scholarship funded by the Department of Science and Technology, Government of India in the year 2022
- Ranked in the National Top 1% among 50,000+ students from across India in the Indian Olympiad Qualifiers in Chemistry (IOQC) 2022
- Secured a Zonal Rank of 2 and an International Rank of 8 in the National Science Olympiad (NSO) conducted by SOF in the year 2019

SKILLS & EXPERTISE

- **Languages:** C++, Python, C, SQL, MATLAB, Simulink, Git, HTML, CSS
- **Softwares and Libraries:** Langchain, PyTorch, Hugging Face, Keras, NumPy, Pandas, Matplotlib, Scikit-learn, Seaborn

POSITIONS OF RESPONSIBILITY

Executive Head | Kharagpur Data Analytics Group (KDAG), IIT Kharagpur   *Jun 2024 - Apr 2025*
- Managed sponsorship initiatives for the Kharagpur Data Science Hackathon, which witnessed 6000+ participations in the year 2024
- Curated relevant content and successfully conducted the Machine Learning workshop for the first year undergraduates of IIT Kharagpur
- Conducted research and presented a white paper on 'ConvNeXt: A ConvNet for the 2020s', detailing its architectural improvements

General Secretary Technology | Vidyasagar Hall of Residence, IIT Kharagpur   *Jun 2024 - Apr 2025*
- Managed 10 events for the General Championship, handling logistics, communications, and actively engaging 100+ participants
- Supervised hall-level technical activities and operations, promoting active involvement and managing the hall's technology budget efficiently