Sayak Rana

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EDUCATION

Indian Statistical Institute (ISI), Kolkata **2024 – 2026**
Master of Technology in Computer Science - ***Percentage - 83.22 % (Current)***

Indian Institute of Engineering Science and Technology (IIEST), Shibpur **2019 – 2023**
Bachelor of Technology in Computer Science & Technology - ***CGPA - 9.54***

Arambagh Vivekananda Academy
2019: *Class XII:* ***96.4%*** ***2017:*** *Class X:* ***CGPA: 10***

EXPERIENCE

RPSG Ventures | Java, Spring Boot, Oracle SQL, JS **July, 2023 – Aug, 2024**
Management Trainee *Kolkata*

- Developed a **billing automation system** for **Kolkata Durga Puja**, handling bill calculations and generation; streamlined abatement process for CESC Ltd, reducing manual workload.
- Automated multiple traditional workflows, improving operational efficiency.

RPSG Ventures | Java, Oracle SQL, JS, Machine Learning **May, 2022 – July, 2022**
Summer Intern *Kolkata*

- Implemented **K-Means clustering** on 3K equipments and scaled to 16.8K using **text similarity measures**, enabling automated **electrical isolation allocation** in the Defect Management System and reducing manual errors for CESC Ltd power plants.

PROJECTS

Twitter Image & Text Multimodal Analysis | Deep Learning **May, 2023**

- Built a multilingual multimodal classifier (**BERT/ALBERT/DistilBERT for text, ViT for images**) on scraped Twitter posts; best model achieved **87% accuracy, Precision 88%, Recall 85%, AUC 0.95**.
- Collected dataset via **Web scraping, OCR, and image captioning**; mitigated severe class imbalance using synthetic augmentation, enabling robust **derogatory content detection**.

Credit Score Classification | Machine Learning **April, 2025**

- Performed **extensive preprocessing** on 100K+ financial records, including missing value imputation, outlier detection, Chi-square correlation analysis, and applied **SMOTE** for class balancing.
- Trained multiple models (**Logistic Regression, Random Forest, XGBoost**); best model (**XGBoost**) achieved **81.3% accuracy, AUC 0.89**, with feature importance analysis identifying key credit risk drivers.

Breast Cancer Segmentation | Computer Vision, Deep Learning **Sep, 2025 – Present**

- Implemented and **compared U-Net and Attention U-Net** architectures in **PyTorch** for breast cancer segmentation on the Kaggle Breast Ultrasound Images dataset, using extensive augmentations and hyperparameter tuning.
- Attention U-Net achieved best results: **Dice 0.72**, **IoU 0.58**, **Accuracy 95%**.

SKILLS

Programming Languages: Python, SQL, C, C++, Java, JS
Libraries: PyTorch, NumPy, Pandas, Matplotlib, Scikit-learn
Relevant Coursework: Machine Learning, Deep Learning, Statistical Methods

ACHIEVEMENTS

- **Publication:** A survey and a comparative study on the analysis of negative feelings in social media data , **Springer Nature**
- Selected for **Amazon ML Summer School 2025**
- Secured **10th rank** in **West Bengal** in **Class 12 AISSCE (CBSE)** Board Examination.
- Secured **3rd rank** in **10 Days of Code**, organized by **NIT Durgapur**.