AGNISH BHATTACHARYA

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LinkedIn GitHub Scholar Webpage

EDUCATION

B.E. in Electrical Engineering	Jadavpur University **(CGPA: 9.22/10)**	*Jul 2020 - Jul 2024*
ISC (Class XII)	St. Xavier's Institution **(98.25%)**	*Mar 2018 - Mar 2020*
ICSE (Class X)	St. Xavier's Institution **(98.2%)**	*Mar 2013 - Mar 2018*

TECHNICAL SKILLS

Languages	Python, C/C++, SAS, SQL, R, Matlab
Tools & Frameworks	Langchain, PyTorch, TensorFlow, OpenCV, Pandas, NumPy, SAS Viya, AWS, MS Excel
Development	HTML, CSS, MongoDB, Streamlit, Shell Utilities, Git

WORK EXPERIENCE

Sumitomo Mitsui Financial Group India Credit, Mumbai, India
Analytics & Information Management *Jun 2024 - Present*

- Developed application scorecards for personal loan approvals, reducing bad rates by $\sim 18\%$. The process involved a **vintage study**, **capture-conversion**, and **roll-rate analysis** to identify the bad definition, followed by feature engineering (**IV**, **colinearity checks**), model development and validation (**K-S**, **Gini**).
- Conducted in-depth bad rate and volume analysis to identify regions for product expansion; performed peer analysis for **cross-selling opportunities**; devised a **cut-off strategy** to increase product profitability by ~ 200 bps; filtered bureau variables and identified segments using **Decision Trees** and **Regression** algorithms.

RESEARCH EXPERIENCE

Indian Statistical Institute, Kolkata, India *Aug 2022 - Jun 2024*
Research Intern, ECS Unit — Advisor: *Dr. Swagatam Das*

- Developed advanced **Data Augmentation**, **Bias-Mitigation** & **Imbalance-handling** methodologies.

Leiden Medical University, Netherlands (*LOR*) *Aug 2022 - Jun 2023*
Research Intern, Division of Image Processing — Advisor: *Dr. Marius Staring*

- Worked on **generative modeling** of living cell shapes using **Neural Implicit Functions**.

PROJECTS

- **Automated E-commerce Product Listing Framework** *Dec 2024 - Apr 2025*
  A tool to automate product listing from social media content by processing audio and visual data; implemented **Katna** for keyframe extraction, **Whisper** for audio transcription, **YOLO v8** for object detection, and **Gemini** for generating product descriptions, keeping **Langchain** as the base framework and hosting using **MongoDB** and **Streamlit**.
- **Spatial Multi-omics integration using Graph Variational Auto-Encoders** *May 2023 - Jul 2023*
  A deep learning framework leveraging a **Graph Attention Variational Auto-Encoder**, an **Adaptive Spatial Attention**, and a **CLIP** inspired loss function to seamlessly reduce high-dimensional multiomics data to a common low-dimensional latent space embedding.
- **Feature-Space Optimization with Genetic Algorithm** *Mar 2022*
  Deep analysis of histopathological image samples using **GoogleNet**, **ResNet-18** and **VGG-19** networks to classify the breast tumor tissue into benign or malignant, with the feature space further optimized using Genetic Algorithm, achieving a maximum accuracy of **97%**.

RESEARCH PUBLICATIONS

- **Agnish Bhattacharya**, Biswajit Saha, Soham Chattopadhyay, Ram Sarkar, "**Deep Feature Selection using Adaptive β-Hill Climbing aided Whale Optimization Algorithm for Lung and Colon Cancer Detection**" (*Published in Biomedical Signal Processing and Control, ELSEVIER*).
- Faizanuddin Ansari, **Agnish Bhattacharya**, Biswajit Saha, Swagatam Das, "**Mo2E: Mixture of Two Experts for Class-Imbalanced Learning from Medical Images**" (*Presented at IEEE ISBI, 2024*).

ACADEMIC ACHIEVEMENTS

- **Department Rank 2** (Silver Medalist), Jadavpur University. WBJEE (2020) Rank: **701/1L (99.3 %ile)**
- **AIR 7** at the Secondary Examinations (ICSE) and **AIR 8** at the Higher-Secondary Examinations (ISC)
- **SURGE-2023 Research Fellowship** by Indian Institute of Technology, Kanpur