

# 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 company profitability; 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  $\beta$ -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