# Jasmin Jahan Puspo

jasminjahanpuspo@gmail.com | Academic Portfolio | Sylhet, Bangladesh

## Education

**Master's in Computer Science and Engineering** Jan. 2023 – present
*Shahjalal University of Science & Technology* *CGPA: N/A (in progress)*

**Bachelor's in Computer Science and Engineering** Jan. 2017 – Jun. 2021
*North East University Bangladesh* *CGPA: 3.54/4.0*

## Research Interests

• Medical Imaging • Computer Vision • Machine Learning

## Publications

### Journal

- TransembleNet: Enhancing vector mosquito species classification through transfer learning-based ensemble model. *Plos One 2025*

### Conference

- BengaliTaka: A Comparative Analysis of Transformer and CNNs on Bangladeshi Currency Recognition. *QPAIN 2025*
- SkinNet: An EnsembleNet Technique to Detect Skin Cancer Using Pre-Trained Models. *ECCE 2025*
- A Novel Approach to Classify Breast Cancer Using Transfer Learning. *ICCIT 2024*

## Academic Thesis

One Stage Detection, Segmentation, Shape, and Stage Classification in Digital Mammography. *Undergraduate Thesis, NEUB | 2021*

## Research Experience

**AI Researcher** Jan. 2025 - present
*SafeNet.AI | Remote* *Dhaka, BD*

- Implementing transformer models in Python for retinal disease detection, focusing on conditions like diabetic retinopathy, and removing black borders during preprocessing.

**Volunteer Research Intern** | *Remote* Sep. 2023 – Feb. 2024

- Collaborated with lab team to develop innovative research methodologies, improving efficiency and accuracy
- Summarized from recent research papers and wrote a literature review catalog template

## Professional Experience

**ML Engineer** Feb. 2025 - present
*NxtVis | Remote* *Dhaka, BD*

- Developing and optimizing deep learning models for real-time anomaly detection in video streams.
- Collaborating with cross-functional teams to refine datasets and improve model performance.

**Content Writer** Oct. 2022 - May 2023
*Russkin Bright | Hybrid* *Sylhet, BD*

- Researched and created engaging curriculum, modules, and MCQ for various courses.
- Wrote sales content of 300-450 words by maintaining 100% quality and zero plagiarism.

## Technical Skills

**Programming Language**: Python
**Machine Learning**: TensorFlow, Keras, Transformers
**Data Analysis**: Numpy, Pandas, Scikit-learn, OpenCV
**Tools**: JIRA

## Dataset Collections

• Bengali Taka • Bengali Sign Language

## Teaching Experience

**Trainee ICT Lecturer** | $(9^{\mathbf{th}} - 12^{\mathbf{th}})$ **grade** Feb. 2024
*Women's Model College* *Sylhet, BD*

- Responsible for conducting daily 40-minute multimedia classes, delivering up to four lectures each day.
- Conducted classes covering technological topics, including theoretical coursework, and programming languages.

**ICT Teacher** | $(3^{\mathbf{rd}} - 8^{\mathbf{th}})$ **grade** Sep. 2022 - Dec. 2022
*Sylhet International School and College* *Sylhet, BD*

- Prepared lesson plans including laboratory class, lecture, exam, and homework.
- Graded assignments, tests, and lab work, providing constructive feedback to help students improve academically.

**Peer Tutor** | $(3^{rd} - 12^{th})$ *grade* May 2013 – Jun. 2024

- Designed lesson plans and materials to simplify concepts, enhancing student understanding and engagement.
- Assisted students with college admissions, supporting them in securing placements at reputable colleges.

## Personal Projects

**Fully Automatic Computer-aided Mass Detection and Segmentation via Pseudo-Color Mammograms and Mask R-CNN**

- Reduced image size using MatLab; Data size: 8.38 GB; Mask R CNN algorithm experimented on Gray and PCM images and predicted 67% and 87% accuracy.

**Object Detection & Segmentation**

- Gathered and annotated data (15 images) from the internet
- Detected and segmented aimed objects via the Mask R CNN algorithm, leading to 95% success.

## Academic Projects

**Breast Cancer Classification**

- Utilized an ideal CNN model to classify the binary cancer stage with 95% accuracy on the MIAS dataset.

**Bangla Money Recognition-Kaggle**

- Classified Bangla Nine notes with KNN, Linear Regression, and CNN algorithms from scratch and compared them with Scikit Learn libraries to obtain similar accuracy.
  - Key achievement: Github Arctic Code Vault Contributor 2020

**Titanic Survival Prediction-Kaggle**

- Trained RF and KNN algorithms to predict whether passengers would survive and received a 71% score.

**Object Info**

- Collected short descriptions and a single image of 25 objects from the internet as input; identified and briefly described an object with pronunciation as output.

**Line Follower Robot**

- The four-wheeled robot passed in a particular direction, i.e., lines (90, 180 degrees) and angles (V, U shapes)
  - Key accomplishment: Placed second in the NEUB ICT Fest 2018.