Md Khalequzzaman Sarker Likhon

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Research Interests

- Computer Vision (Image Processing, Classification, Segmentation, Object Detection, 3D Point Cloud Processing).
- Applications in Medical Image Analysis, Robotics, Autonomous Driving, and Video Analytics.
- Deep Learning, Semi-Supervised Learning, Natural Language Processing (NLP), Large Language Models (LLM)

Academic Credentials

Ahsanullah University of Science and Technology Apr 2016 – Jan 2021
B.Sc. in Computer Science and Engineering

- **CGPA:** 2.74/4.0
- **Coursework:** Data Structures, Algorithms, Artificial Intelligence, Pattern Recognition, Digital Image Processing, Computer Graphics.

Research Experience

(* denotes equal contribution)

- MKS Likhon*, Iffatun Nessa*, MH Abir*, Nazmus Sakib*, **Design of an Arrhythmia Classification Algorithm Using 2-D Convolutional Neural Networks**, Undergraduate Research Project, Ahsanullah University of Science Technology, 2021. (Unpublished)
- MKS Likhon*, Md Malek Sarker*, **Self-Supervised Learning for Pneumonia Detection Using Contrastive Learning**, 2024 (Manuscript in preparation)

Relevant Projects

Pneumonia Detection on Chest X-Rays (CXR) GitHub Repository

- Developed a deep learning model for pneumonia detection by integrating EfficientNetB0 and DenseNet121 architectures.
- Incorporated attention mechanisms to enhance the model's performance and accuracy in identifying pneumonia.

Object Detection on PASCAL VOC 2012 Dataset with Faster R-CNN GitHub Repository

- Implemented object detection using Faster R-CNN with ResNet-50 as the backbone, fine-tuned for the PASCAL VOC dataset.
- Performed data augmentation techniques, including horizontal flips, brightness, and contrast adjustments, to improve model robustness
- Deployed the model using Streamlit to create an interactive web interface for real-time detection.

Semantic Segmentation on CamVid Dataset GitHub Repository

- Applied multiple architectures including FCN, U-Net with attention, and DeepLabV3+ for semantic segmentation on the CamVid dataset.
- Compared the performance of each model based on evaluation metrics (Mean IoU and pixel accuracy).

Resume Categorization using BERT GitHub Repository

- Worked with a real-world dataset for resume categorization using a BERT-base-uncased model with fine-tuned hyperparameters.
- Provided comprehensive guidelines to deploy the model for categorization tasks in real-world applications.

Technical Skills

Programming Languages	C, C++, Java, Python
Libraries and Frameworks	NumPy, Pandas, Scikit-learn, OpenCV, Streamlit, TensorFlow, Keras, PyTorch
Development Tools	PyCharm, Jupyter Notebook, Google Colab, Visual Studio Code, CodeBlocks
Database	MySQL, PostgreSQL
Version Control System	Git

Certifications

Machine Learning — Coursera 2023

- **Topics:** Supervised Learning (e.g., Linear Regression, Logistic Regression, Support Vector Machine, Neural Networks) and Unsupervised Learning (e.g., k-means, PCA, Anomaly Detection).

Neural Networks and Deep Learning — Coursera 2021

- **Topics:** Neural Networks, Computational Graphs, Forward and Backward Propagation, Gradient Calculation.

Linguistic Proficiency

Bengali	Mother Tongue
English	CEFR Level – C1

Extra Curricular Activities & Achievements

Education Board Scholarship(Junior)	2009
Education Board Scholarship in Secondary School Certificate	2012
District Astro Olympiad (3rd)	2010
Home Tutor(From 10th to 12th grade)	2017-2022
Valuable member of Organizing Committee of AUST Codeware(programming contest)	2019
Member of AUST CSE(Batch-37) Football Team-(Champions-2019)	2016-2019
Valuable Member of School Hand Ball Team (District Champion)	2011