Golam **Jilani**

Dhaka, Bangladesh

golam.jilani1656@gmail.com baizidjilani.github.io golamjilani

Academic Background

Shahjalal University of Science & Technology *Sylhet, Bangladesh.*

Bachelor of Science in Computer Science & Engineering; GPA: 3.51/4.00 (**3.73** in the last two years) *May 2023*

Research Interests

Machine Learning; Computer Vision; Natural Language Processing; Generative AI; Health Informatics

Research Experience

Reasearch Assistant *Jul 2022 - Jun 2023*

Department of Computer Science & Engineering, SHAHJALAL UNIVERSITY OF SCIENCE & TECHNOLOGY *Sylhet, Bangladesh*

Principal Investigator: **Dr. Sadia Sultana**

- Collaborated with four other researchers in a funded university research project (SUST Research Center, SUST, Sylhet, Bangladesh) to construct an acted facial expression dataset by native Bangladeshi participants.
- Preprocessed the data (annotation, cropping, and resizing) using OpenCV and face detection using RetinaFace.
- Performed cross-cultural experiments using deep learning models to explore the cultural differences in expressions across regions.

Undergraduate Thesis *Jan 2022 - Mar 23*

Department of Computer Science & Engineering, SHAHJALAL UNIVERSITY OF SCIENCE & TECHNOLOGY *Sylhet, Bangladesh*

Development of an Ensemble Learning system for Facial Expression Recognition using smaller CNN models with Transfer Learning

Summary: Our research aims to find an efficient way to recognize facial expressions (expression images from multi-angles) by ensembling smaller models without compromising accuracy. For this, we developed and trained a Facial Expression Recognition ensemble learning system using smaller CNN models with transfer learning, which achieved 97.55% accuracy on the benchmark dataset KDEF. We utilized transfer learning and advanced data augmentation to deal with overfitting problems and assessed the performance of Mixup and CutMix data augmentation on our benchmark datasets.

Current Research Project *Ongoing*

SHAHJALAL UNIVERSITY OF SCIENCE & TECHNOLOGY | The University of Texas at El Paso *Sylhet, Bangladesh | Texas, USA*

DepressionTrend: Using Dynamic Word Embeddings to Analyze the Trends of Depression

Summary: We aim to analyze the depression trends from social media texts using dynamic word embeddings, for which we collected a bulk amount of depression-related data (1M posts) crawling from Reddit and utilized NLTK for text processing. We preprocessed the data in a time-based approach: Incremental Window and Sliding Window. Pre-trained word embeddings like Skip-gram and GloVe are used to analyze trends related to depression utilizing semantic relationships encoded in word vectors. We are now monitoring the changes in word embeddings and also observing how depression and anxiety have shifted over the years using temporal data.

Publications

- Sadia Sultana, Saiful Sagor, **Golam Jilani,** Al Masum, and Samara Paul. SUFEDB: An acted facial expression database for emotion recognition. (under review)
- **Golam Jilani,** Samara Paul, and Sadia Sultana. Development of an Ensemble Learning Model for Facial Expression Recognition. (submitted for review)

Relevant Courses

Undergrad CS Courses:

Machine Learning, Artificial Intelligence, Introduction to Computer Security, Data Science, Data Structures and Algorithms, Computer Architecture, Computer Networks, Operating System, Cloud Computing, and Discrete Mathematics.

Undergrad Math Courses:

Linear Algebra, Calculus, Complex Analysis, Statistics & Probability, Complex Variables, Laplace Transforms, and Fourier Series.

Test Scores

IELTS: **7.5 (L-8.5, R-8.5, W-6.5, S-7)**

Skills

Languages:	**Python, C, C++, Java, JavaScript, MATLAB**
ML Frameworks:	**PyTorch, TensorFlow (Keras), scikit-learn, NLTK**
Image Processing Libraries:	**OpenCV, PIL, FaceNet**
Databases:	**MySQL, SQLite, MongoDB**

Online Courses

2022 **Neural Networks and Deep Learning**, course offered by Coursera.

2022 **AWS Cloud Foundations**, course offered by Amazon Web Services (AWS).

Undergrad Project Experience

La-Tienda: A web based E-commerce Application *2022*

Academic Project (Senior Year, Course: Web Technologies)

An E-commerce platform implemented by microservices architecture for three different users, i.e., customers, sellers, and admin, where MERN stack (MongoDB, Express.js, React.js, and Node.js) was used for building frontend and three APIs (Bank-API, E-commerce-API, and Supplier-API).

Result Processing System (RPS): A web application for result processing *2021*

Academic Project (Junior Year, Course: Software Engineering & Design Patterns)

A web-based application implemented for interactions between teachers and students, where students can view their academic results and download the tabulation sheet, and teachers can view, enter, and edit the marks and generate the tabulation sheet. JavaScript, Django framework, and SQLite3 were used to develop this application.

Awards

National Higher Secondary Education Scholarship (High School) *2017*

Issued by Board of Intermediate & Secondary Education

- Awarded every year for outstanding performance in a nationwide Higher Secondary exam by the Government of Bangladesh.

National Secondary Education Scholarship (Middle School) *2015*

Issued by Board of Intermediate & Secondary Education

- Awarded by the Government of Bangladesh every year for outstanding performance in a very competitive nationwide exam.

References

Dr. Sadia Sultana
Associate Professor
Department of Computer Science and Engineering
Shahjalal University of Science and Technology
Email: sadia-cse@sust.edu
Moblie: +880 1911-089612

Prof. Maruf Ahmed Mridul
Assistant Professor (On Leave)
Department of Computer Science and Engineering
Shahjalal University of Science and Technology
Email: mridul-cse@sust.edu
Moblie: +1 518-308-7387