Golam **Jilani**

Dhaka, Bangladesh

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Research Interests

Machine Learning; Computer Vision; Natural Language Processing; Data Mining

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) *March 2023*

Research Experience

Reasearch Assistant *Nov 2022 - Feb 2023*

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

Supervisor: **Dr. Sadia Sultana**

- Collaborated with three other students and one professor in a university research project on creating a novel acted facial expression database for emotion recognition.
- Annotated facial expression images via OpenCV and preprocessed images to ensure data uniformity of the dataset.
- Evaluated and analyzed the performance of existing state-of-the-art CNN models on the dataset.

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 Utilizing Deep Convolution Neural Networks with Transfer Learning

Supervisor: **Dr. Sadia Sultana**

- Conducted literature reviews to assist in shaping the overall design of the research.
- Developed and trained an efficient Facial Expression Recognition system utilizing Deep Convolution Neural Networks in an Ensemble with Transfer Learning, achieving 97.32% accuracy.
- Incorporated Transfer Learning and Data Augmentation to address the overfitting issue.

Collaborative Research *Ongoing*

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

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

Supervisor: **Prof. Moqsadur Rahman**

- Collected a bulk amount of depression-related data (1M posts) crawling from Reddit and utilized NLTK for text processing.
- Preprocessed the data in a time-based approach: Incremental Window and Sliding Window.
- Used pretrained word embeddings like Skip-gram and GloVe for analyzing trends related to depression involves leveraging the semantic relationships encoded in word vectors.
- Monitored the changes in word embeddings 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 in one of the IEEE Transactions journals)

- **Golam Jilani,** Samara Paul, and Sadia Sultana
  "Leveraging Deep Convolutional Neural Networks in Ensemble with Transfer Learning and Data Augmentation for Facial Expression Recognition" (manuscript under preparation)

Skills

Languages: **Python, C, Java, JavaScript**
Databases: **MySQL, SQLite, MongoDB**
Frameworks: **PyTorch, Keras, Numpy, Pandas, scikit-learn, OpenCV, NLTK**

Test Scores

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

Licenses & Certifications

2022 **Neural Networks and Deep Learning**, course offered by Coursera.
2022 **AWS Cloud Foundations**, course offered by AWS.
2020 **Python Data Structures**, course offered by Coursera.
2020 **Using Python to Access Web Data**, course offered by Coursera.

Selected Projects

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

Academic Project

- Created a comprehensive e-commerce platform using MERN stack (MongoDB, Express.js, React.js, and Node.js).
- Developed and integrated three APIs (E-commerce, Bank, and Seller) to improve user functionality and overall experience.

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

Academic Project

- Created and implemented various models to establish and maintain interrelationships among models on the backend using Django.
- Developed and deployed a resilient database using SQLite, guaranteeing accuracy and ease of access to the data.

Awards & Achievements

National Higher Secondary Education Scholarship *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 *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.

Relevant Courses

CS and ML Courses:
Machine Learning, Artificial Intelligence, Digital Signal Processing, Data Science, Data Structures and Algorithms, Computer Architecture, Computer Networks, Operating System, Cloud Computing, and Discrete Mathematics.

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

Extracurricular Activities

2018-2022 **Member**, CSE Society (SUST) *Sylhet, Bangladesh*
2021 **Participated in First Aid Training Program**, Jafrabad Medical Camp, Global Relief Trust (GRT) *Sylhet, Bangladesh*

References

Dr. Sadia Sultana
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Prof. Maruf Ahmed Mridul
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