# Golam **Jilani**

*Dhaka, Bangladesh*

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## Research Interests

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

## Academic Background

**Bachelor of Science in Computer Science & Engineering**  *Sylhet, Bangladesh.*
SHAHJALAL UNIVERSITY OF SCIENCE & TECHNOLOGY (SUST)  *March 2023*
CGPA: 3.51/4.00 **(3.73/4.00 in the last four semesters)**

## Research Experience

**Reasearch Assistant**  *Sylhet, Bangladesh*
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, SHAHJALAL UNIVERSITY OF SCIENCE & TECHNOLOGY  *Nov 2022 - Feb 2023*
Title: **"SUFEDB: A facial expression database for emotion recognition"**
- Supervisor: Dr. Sadia Sultana
- Collected consent from participants and annotated expression images via OpenCV.
- Done preprocessing of images to ensure data uniformity of the dataset.
- Evaluated and analyzed the performance of current existing state-of-the-art CNN models on the dataset.

**Undergraduate Thesis**  *Sylhet, Bangladesh.*
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING, SHAHJALAL UNIVERSITY OF SCIENCE & TECHNOLOGY  *Jan 2022 - Mar 23*
Title: **"Development of an Ensemble Learning Model for Facial Expression Recognition Using Multi-Branch Sub-Networks"**
- Conducted literature reviews to assist in shaping the overall design of the research.
- Developed an efficient Facial Expression Recognition system using Deep Convolution Neural Networks in Ensemble with Transfer Learning and Data Augmentation.
- Incorporated Transfer Learning and Data Augmentation to address the overfitting issue.
- Compared the recognition accuracy of the proposed system with the existing methods.

**Collaborative Research**  *Sylhet, Bangladesh | Texas, USA.*
SHAHJALAL UNIVERSITY OF SCIENCE & TECHNOLOGY | THE UNIVERSITY OF TEXAS AT EL PASO  *Ongoing*
Title: **"DepressionTrend: Leveraging Dynamic Word Embeddings to Analyze the Trends of Depression"**
- Collected bulk amount of depression related data (1M posts) crawling from Reddit.
- Utilized NLTK for text processing, and custom functions for text cleaning.
- Preprocessed the data in time-based approach: Incremental Window and Sliding window.
- Used pretrained word embedding models 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: A 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

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|---|---|
| **Technical:** | Machine Learning, Natural Language Processing, Java, JavaScript, MySQL, MongoDB |
| **Languages:** | Python, C, Java, JavaScript |
| **Frameworks:** | PyTorch, Keras, Numpy, Pandas, scikit-learn, OpenCV, NLTK |
| **Problem Solving:** | Solved 400+ problems in Codeforces, LightOJ, UVa, SPOJ, LeetCode and Hackerrank |

# 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.

# Projects

**La-Tienda: A web based E-commerce Application** ⬚                                 *Oct 2021 - Oct 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.

**A web application for creating Result Processing System (RPS)** ⬚             *Oct 2021 - Dec 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

2017    **Board Scholarship**, Higher Secondary School Certificate Exam

2015    **Board Scholarship**, Secondary School Certificate Exam

2013    **Board Scholarship**, Junior School Certificate 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*

2017    **Led my team to victory in the Inter House Cricket & Football Competition**, Cumilla Cadet College     *Cumilla, Bangladesh*

# References

**Dr. Sadia Sultana**

Associate Professor

Department of Computer Science and Engineering

Shahjalal University of Science and Technology

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**Prof. Maruf Ahmed Mridul**

Assistant Professor

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