

# Md Zahidul Islam

Lecturer, Dept. of Computer Science and Engineering, Islamic University of Technology

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## Education

### Islamic University of Technology (IUT)

📍 Dhaka, Bangladesh

📅 Jan 2017 – March 2021

#### B.Sc. in Computer Science and Engineering (CSE)

- CGPA – 3.99/4.0, Ranked 1<sup>st</sup> in class of 86
- Thesis Supervisor - Professor Dr. Md. Hasanul Kabir
- Thesis Title – Efficient Two-Stream Network for Violence Detection Using Separable Convolutional LSTM

### Cumilla Cadet College

📍 Cumilla, Bangladesh

📅 2010 – 2016

- Higher Secondary Certificate, 2016 - GPA: 5/5
- Secondary School Certificate, 2014 - GPA: 5/5

## Professional Experience

### Islamic University of Technology (IUT)

📍 Dhaka, Bangladesh

📅 July 2021 – Present

#### Lecturer, Dept. of Computer Science and Engineering (CSE)

- Courses Conducted - Digital Signal Processing, Computer Programming, Machine Learning, Algorithm Engineering etc.
- IUT Computer Vision Lab - Collaborated with colleagues in research projects and supervised students in their thesis.

### Apurba Technologies Ltd.

📍 Dhaka, Bangladesh

📅 March 2021 – June 2021

#### Machine Learning Engineer

- Engaged in research and development of large-scale Bengali Optical Character Recognition (OCR) pipelines.
- Developed and optimized deep learning models for grapheme-based Bengali character recognition on both handwritten and printed datasets.
- Implemented image processing and deep learning algorithms for word detection and character segmentation.

### Samsung R & D Institute Bangladesh

📍 Dhaka, Bangladesh

📅 Nov 2019 – Jan 2020

#### Intern, Mobile Application Development and Research

- Developed user identification system by recognizing human walking patterns using ML on smartphone accelerometer data.

## Research Experience

[Scholar] [ORCID]

### Research Interests

- My research interests lie in **Computer Vision**, **Machine Learning**, and **Artificial Intelligence**.
- I am interested in intelligent and interpretable systems for visual understanding and reasoning.

### Publications

- [1] Z. Islam, M. Rukonuzzaman, R. Ahmed, M. H. Kabir and M. Farazi, "Efficient Two-Stream Network for Violence Detection Using Separable Convolutional LSTM", International Joint Conference on Neural Networks (IJCNN), Shenzhen, China, July 18-22, 2021, pp. 1-8 [paper] [code]
- [2] A. S. A. Rabby, M. M. Islam, Z. Islam, N. Hasan and F. Rahman, "Towards Building A Robust Large-Scale Bangla Text Recognition Solution Using A Unique Multiple-Domain Character-Based Document Recognition Approach", 20th IEEE International Conference on Machine Learning and Applications (ICMLA), CA, USA, Dec. 13-16, 2021, pp. 1393-1399 [paper]
- [3] Z. Islam, R. Fariha, "Data-driven Forecasting of Weather in Bangladesh Leveraging Transformer Network and Strong Inter-feature Correlation", 25th International Conference on Computer and Information Technology (ICCIT) 2022, Cox's Bazar, Bangladesh, Dec. 17-19, 2022 (Accepted)
- [4] R. Mahbub, S. Anuva, I. Khan, Z. Islam, "A Comparative Analysis of Efficient Convolutional Neural Network Based Methods for Plant Disease Classification", 25th International Conference on Computer and Information Technology (ICCIT) 2022, Cox's Bazar, Bangladesh, Dec. 17-19, 2022 (Accepted)

### Reviewing Experience

- Reviewed articles for IJCNN (x4), IEEE Access (x2), and Applied Artificial Intelligence (AAAI) (x1).

## Technical Skills

- Proficient in designing and implementing deep learning models and applications on **Pytorch** and **Tensorflow**.
- Programming - **Python**, **C++**, **C**, **Java**      • Web - **HTML**, **CSS**, **JS**      • Image Processing - **Python-OpenCV**, **Matlab**

**EasyScan OCR Whiteboard**

Python, OpenCV, Tesseract

- A interactive GUI digital whiteboard with live handwriting recognition (OCR). This feature allows saving whiteboard sessions as texts and helps improve the understandability of the handwriting.

**Inpainter - A GUI Image Inpainting Tool**

Python, PyQt, OpenCV

- An interactive application that helps fill up missing/damaged areas or remove foreground objects from images.

**Dhaka Traffic Detection**

Python, Pytorch

- Analysed the performance of prominent object detection algorithms such as Yolov3, Yolov5, and hybrid models (Yolov5+ResNet) on Dhaka Traffic Detection Challenge Dataset.

**Traffic Sign Localization and Recognition**

Python, Tensorflow

- A two stage system where at first, region of interests likely to contain traffic signs are found out using *Voila-Jones* object detection algorithm. Then, a deep neural network recognizes the traffic signs.

**Tsaurus - A Learning App for Kids**

Node JS, Python, OpenCV

- Helps children learn new words in a fun way by simply taking photo of text. The software fetches relevant images, dictionary meaning etc. from internet. It uses OCR and webscraping tools.

**Inverse Kinematics Visualizer for 6-DOF Robotic Hand**

Python, Sympy, Matplotlib

- Automates movement of a robotic arm with 6 degrees of freedom and visualizes it using an easy to use PyQt GUI.

**Awards & Accolades****Robotics - European Rover Challenge, Poland**

2019, 2018

- Achieved 15th position in ERC 2019 and 14th position in ERC 2018 with IUT Mars Rover-Team Avijatrik. Worked on robotic arm manipulation and cache retrieval by image processing.

**Matlab Programming Challenge**

2020, 2019

- Champion in Matlab Mania at *Horizon 2020*, KUET and in Matlab Challenge at *Esonance 2019*, IUT.

**ICT Olympiad**

2019

- Champion in the quiz competition "ICT Olympiad" at IUT 10th ICT Fest organized by dept. of CSE, IUT.

**Line Following Robot (LFR) Racing**

2018

- Runners up in LFR Racing at *Technovision* organized by ECE dept., North South University.

**Scholarships**

2016, 2014

- OIC Scholarship for 3 years of undergraduate studies at IUT by Organization of Islamic Cooperation (OIC).
- Higher Secondary Certificate and Secondary School Certificate exam scholarships by Bangladesh Govt.

**Online Certifications**[\[verify\]](#)

- **Deep Learning Specialization, Tensorflow Developer Specialization**, by *DeepLearning.AI*, [coursera.org](https://www.coursera.org)
- **Machine Learning**, by *Andrew Ng, Stanford University*, [coursera.org](https://www.coursera.org)
- **Build Basic Generative Adversarial Networks (GANs)**, by *DeepLearning.AI*, [coursera.org](https://www.coursera.org)

**Standardized Test Scores**

- **GRE**: Quantitative - 167/170, Verbal - 161/170, Analytical Writing - 4.0/6.0 Sept 2021
- **TOEFL**: Total - 116/120, Reading - 30/30, Listening - 30/30, Speaking - 27/30, Writing - 29/30 Nov 2022

**Reference****Dr. Md. Hasanul Kabir**

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**Abu Raihan Mostofa Kamal**

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