

# Md Zahidul Islam

M.Sc. Student, Computer Science, University of Saskatchewan

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## Education

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### University of Saskatchewan (USask)

📍 Saskatoon, Canada

📅 Sept 2023 - Present

#### M.Sc. in Computer Science (CS)

- Supervisor - Dr. Mrigank Roachan

### 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”
  - Developed a learning-based efficient computational model for recognizing specific human actions from video footage.

### Cumilla Cadet College

📍 Cumilla, Bangladesh

📅 2010 - 2016

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

## Research Experience

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[\[Scholar\]](#) [\[ORCID\]](#)

### Research Interests

- My research area is **Computer Vision & Machine Learning**, specifically, intelligent systems for image & video understanding.

### Selected 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)

### Reviewing Experience

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

## Professional Experience

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### University of Saskatchewan (USask)

📍 Saskatoon, Canada

📅 Sept 2023 - Present

#### Graduate Teaching Assistant

- Responsibilities - Assisting Course Instructor in preparing course materials, grading assignments, and helping students.
- Courses - Introduction to Computer Science

### Islamic University of Technology (IUT)

📍 Dhaka, Bangladesh

📅 July 2021 - Aug 2023

#### 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

#### Consultant (Machine Learning Research)

- Collaborated on various research projects related to computer vision and machine learning.
- Engaged in research and development of a web-based Bengali Optical Character Recognition (OCR) pipeline.

### Samsung R & D Institute Bangladesh

📍 Dhaka, Bangladesh

📅 Nov 2019 - Jan 2020

#### Industrial Training

- Acquired hands-on training on computer programming and android application development on Android Studio.

## Linguistic Proficiency and Standardized Test Scores

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- **Excellent Proficiency** in reading, listening, speaking, & writing in **English** and **Bengali**.
- **TOEFL iBT**: Total - **116/120**, Reading - **30/30**, Listening - **30/30**, Speaking - **27/30**, Writing - **29/30** Nov 2022
- **GRE**: Quantitative - **167/170**, Verbal - **161/170**, Analytical Writing - **4.0/6.0** Sept 2021

## Awards & Accolades

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### 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.

## Technical Skills

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- 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**

## Online Certifications

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[\[verify\]](#)

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

## Projects

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[\[github.com/zahid58\]](https://github.com/zahid58)

### 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 webscrapping tools.