# Joy Mazumder

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## Research Interest

Computer Vision, Digital Image Processing, Machine Learning, Robotics

## Education

- 2018: MASc in Electrical & Computer Engineering, Queen's University, ON, Canada (**Ongoing**)
- 2016: B.Sc in **Electrical & Electronic Engineering** (Former: Applied Physics, Electronics & Communication Engineering), University of Dhaka. (**CGPA: 3.67 in the scale of 4.00**)
- 2012: Higher Secondary Certificate from Chittagong Board, Bangladesh. (**GPA 5.00 in the scale of 5.00**)
- 2010: Secondary School Certificate from Chittagong Board, Bangladesh. (**GPA 5.00 in the scale of 5.00**)

## Research Experience

- Graduate Research Assistant, Robotics and Computer Vision Lab, Queen's University (Sep, 2018-ongoing)

## Teaching Experience

- Graduate Teaching Assistant, Electrical and Computer Engineering, Queen's University (Jan, 2019-ongoing)

## Publications

- **Joy Mazumder**, Subrata Sarker, Z.M. Parvez Sazzad. **Video Sequence-Based Traffic Behavior Monitoring System** [Ready to submit]
- **Joy Mazumder,** Laila Naznin Nahar, Md. Moin Uddin Atique, **" Finger Gesture Detection and Application Using Hue Saturation Value ",** International Journal of Image, Graphics and Signal Processing(IJIGSP), Vol.10, No.8, pp. 31-38, 2018.DOI: 10.5815/ijigsp.2018.08.04
- **Joy Mazumder**, Md. Moin Uddin Atique. **Hand Motion Detection Using HSV Values**, IEEESBDU Student Conference on Science & Engineering-2015

## Undergraduate Project

**Title:** Video Sequence-Based Traffic Behavior Monitoring System

**Supervisor:** Z. M. Parvez Sazzad, Ph.D

**Abstract:** In this project, a mathematical model is designed to monitor traffic behaviors. Here two types of traffic behaviors: illegal parking and illegal U-turn are detected. For traffic detection, the background is estimated through running average method up to a few frames and then the absolute difference between current and background frame is taken into account. Illegal parking is detected through consecutive analysis and U-turn is identified by the assumption of some regions on road. The model is tested on two video sequences and obtained satisfactory results.

## Language Proficiency

**Bengali:** Native
**English:** Fluent

## Software

**Simulation Software:** Matlab, Proteus
**Environment:** Windows 10/8.1/8/7/XP. Linux (Ubuntu, Mint)
**Programming:** Python, C++, C, PHP, HTML, CSS, Arduino, Assemble (8086)

## Relevant Coursework

**Undergraduate:** Digital Signal Processing, Control Engineering, Electronic Circuit, Analog Electronics, Digital Electronics, Microprocessor and Assembly Language, Computer Peripheral & Interface, Power Electronics, Electricity and Magnetism, Applied Optics, Electronic Circuits, Electronic Devices, Microwave and Satellite Communication, Ordinary Differential Equations, Numerical Analysis, Mathematical Methods, Mathematical Statistics, Linear Algebra.

## Awards & Honors

- Runner-up, EEC Programming Contest-2016
- Champion, EEC Circuit Contest-2016
- 2$^{nd}$ runner-up, EEE day Circuit Contest, University of Dhaka
- Scholarship for Academic Excellence of Jagannath hall residents (SARATHI)-2015

## Leadership & Volunteering Experience

- President, Electrical & Electronics Club (EEC), Dept. of EEE, DU, Nov. 2016-Present.
- Volunteer at ICIEV Conference, Dhaka-2014.
- Assistant Organizing Secretary of Electrical and Communication Club (now EEC), 2014-15.
- Executive Committee member EEE-DU annual picnic-2016, EEE study tour 2017 & 2015, Dept. of EEE Fresher's reception & farewell program 2014.

## Professional Affiliations

- Trainer on Workshop on PCB design-2017.
- Trainer on Workshop on Basic Robotics & Automation, 2017
- Student Member IEEE.
- Teaching A level & O level Mathematics & Physics since 2013
- Designed IEEE Student Branch official website 2015
- Designed SCSE Conference official website 2015

## Training & Workshops

- Workshop on IoT, organized by IEEE student branch, DU, 2017
- Workshop on Android programming, Dept of EEE, Dhaka, 2017
- Kaptai Hydro Electric Power Plant Training Program-2015
- Workshop on Arduino-2015
- Industrial tour on Bangladesh Atomic Energy Commission-2014