MD Shafkat Rahman Farabi

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Education

Jan 2017 – Mar 2020 | **Islamic University of Technology**
BSc in Computer Science and Engineering
- CGPA: **3.92**/4.00
- 5^{th} in a class of 86

2014 – 2016 | **Adamjee Cantonment College**
Higher Secondary Certificate
- GPA: **5.00**/5.00

Work Experience

July 2021 – Present | **Lecturer - Islamic University of Technology**
Department of Computer Science and Engineering
- *Courses Conducted:*
  - Differential calculus and Geometry
  - Numerical Analysis
  - Structured Programming
  - Digital Logic Design
- Affiliated with the *Computer Vision* research lab

Nov – Dec 2019 | **Intern - Robi Axiata Limited**
Technology Department
- Observed how the nationwide telecommunication network is maintained
- Worked as a part of the RAN team

Research

Thesis | **Assessment of Human Actions from Videos Using Deep ResNets and WeightDecider**

Final year thesis for acquiring BSc degree. The work falls in the domain of *Computer Vision* and is closely related to *Action Recognition*. The goal of this work is to asses and score human actions performed from a video of the said action.
- Achieved better performance than SOTA on MTL-AQA dataset
- Designed and coded experimenrts using pyTorch toolkit [Code]
- Manuscript for publication based on this work

Field Of Interest | Computer Vision, Deep Learning

Skills

- Programming Languages - C++, C, Python, Java, JavaScript
- Proficient in using *pyTorch*, *openCV* and *NumPy* libraries in Python
- Well versed in Git

Projects

Automatic Traffic Sign Recognition and Classification - Python, Tensorflow, OpenCV, Numpy

- Haar Cascade classifier used to detect and localize traffic sign in image
- Deep CNN used for classification after detection
- Trained and tested on *German Traffic Sign Recognition Benchmark* dataset (93% accuracy on test data)

Voice Controlled Remote Home Assistant - Python, C, Arduino

- Voice command based wireless communication dependent system that can manage various systems (like turning lights off and on etc.) using Arduino and ESP 8286 module
- Python used for voice to text conversion in computer and to send text data over WiFi to ESP-8286
- C used to program Arduino board to receive data from ESP-8286 and manipulate circuitry accordingly

Automated Synchronized Traffic Control System using Minizinc - Python, MiniZinc

- Modeled traffic light management in an urban setting as a constraint satisfaction problem
- Used MiniZinc, a constraint modeling language to find the optimum traffic light state (which lights should be turned on and which should be turned off for the least traffic congestion)
- Used python to run simulations to test the MiniZinc solver as well as to provide a frontend

Achievements

- Champion, 20^{th} Intra IUT Programming Contest -2019
- Champion, Matlab Coding Competition, Essonance -2019
- Qualified for and participated in ACM ICPC Dhaka Regional Contests -2017, 2018 & 2019
- Achieved OIC scholarship which provided funds for 3 years of undergraduate studies -2017

Standardized Examination Scores

GRE: Quantitative Analysis: **168**/170 Verbal Analysis: **162**/170 Analytical Writing: **5.5**/6

TOEFL: Total Score: **118**/120 (Writing-30, Listening-30, Speaking-28, Writing-30)

References

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