

Shafkat Farabi

✉ mfarabi@gmu.edu

📧 farabi_Shafkat

☎ +8801963291740

📞 Farabi-shafkat

🏠 Islamic University of Technology

🌐 <https://farabi-shafkat.github.io>

Work Experience

Aug 2022 – Present	Graduate Teaching Assistant - George Mason University <i>Department of Computer Science</i>
July 2021 – Aug 2022	Lecturer - Islamic University of Technology <i>Department of Computer Science and Engineering</i> <ul style="list-style-type: none">• <i>Courses Taught:</i> Differential Calculus and Geometry, Digital Logic Design, Numerical Analysis lab, Structured Programming lab, Algorithm Engineering lab, Compiler Design lab• Affiliated with the <i>Computer Vision</i> research lab• Supervised undergraduate software projects• Part of administrative committees handling <i>course load distribution</i> and <i>web-site maintenance</i>

Education

Aug, 2022–Present	George Mason University, Virginia, USA <i>Ph.D. in Computer Science</i>
Jan 2017 – Mar 2021	Islamic University of Technology, Bangladesh <i>BSc in Computer Science and Engineering</i> <ul style="list-style-type: none">• CGPA: 3.92/4.00 • 5th in a class of 86

Research

B.Sc. 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 <i>Computer Vision</i> and is closely related to <i>Action Recognition</i> . The goal of this work is to assess and score human actions performed from a video of the said action.
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Fields Of Interest Computer Vision, Deep Learning, Human Action Recognition

Publication

- Farabi, S., Himel, H., Gazzali, F., Hasan, M.B., Kabir, M.H., Farazi, M. (2022). Improving Action Quality Assessment Using Weighted Aggregation. In: Pinho, A.J., Georgieva, P., Teixeira, L.F., Sánchez, J.A. (eds) Pattern Recognition and Image Analysis. IbPRIA 2022. Lecture Notes in Computer Science, vol 13256. Springer, Cham. https://doi.org/10.1007/978-3-031-04881-4_46

Skills

- Programming Languages : C++ , C, Python, Java, JavaScript, Matlab
- Proficient in using *PyTorch*, *OpenCV* and *NumPy* libraries in Python
- Well versed in version control using Git

Projects

<https://github.com/Farabi-shafkat>

Automatic Traffic Sign Recognition and Classification

- Python, Keras, 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
- Used C 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, 20th 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 100% funding for 3 years of undergraduate studies -2017

Problem setting and Judging

- Ada Lovelace National Girls Programming Contest, 2021
- IUT Intra First Year Programming Contest, 2021
- Toph Criterion Round 14, 2021
- Toph 16th December Programming Contest, 2019

Standardized Examination Scores

GRE:	Quantitative Analysis 168/170 (91st percentile)	Verbal Analysis 162/170 (90th percentile)	Analytical Writing 5.5/6 (98th percentile)
TOEFL:	Total Score: 118/120 (Reading-30, Listening-30, Speaking-28, Writing-30)		