

# Sheik Murad Hassan Anik

Ph.D. Candidate & Graduate Research Assistant, Virginia Tech

+15408357593 | [murad@vt.edu](mailto:murad@vt.edu) | [anik801.github.io/portfolio](https://github.com/anik801) | [github.com/anik801](https://github.com/anik801) | [linkedin.com/in/anik801](https://www.linkedin.com/in/anik801) | Sheik Anik

## Education

### Virginia Tech

Ph.D. in Computer Science and Applications

Blacksburg, VA

December 2023 (Expected)

### Virginia Tech

M.Sc. in Computer Science and Applications

Blacksburg, VA

December 2022

### Ahsanullah University of Science and Technology (AUST)

B.Sc. in Computer Science and Engineering

Dhaka, Bangladesh

January 2016

## Work Experience

### Graduate Assistant, Virginia Tech

May 2018 to current

- Working as a research assistant in NiSE (iNnovations in Software Engineering) group
- Led research paper writing based on software engineering and building engineering research projects
- Instructed over 400 students in Software Development, Data Structures, Web Application Development courses

### Lecturer, AUST

April 2016 to August 2018

- Instructed 450+ students on Micro-controller, Arduino, and, Raspberry Pi based systems in the MSD course
- Guided 200+ students on Introduction to C, Java, data structures & algorithms courses

### Software Engineer, Qubix Lab

February 2015 to May 2015

- Collaborated with a four-person team to develop a web-based information collection system in a Government Project
- Used PHP, HTML, JavaScript, and, MySQL to enable mass data-collection automation of local industries

## Projects

### Characterization of automation configuration issues in smart home systems

Ongoing

- Accumulated 450 automation configuration issues faced during the development of smart home systems
- Conducted a manual investigation for issue classification, finding patterns in issues and their respective solutions

### Occupant profile generation in smart buildings: Machine learning approach

December 2022

- Applied 6 state-of-the-art machine learning models for automatic building occupant characteristics classification and prediction
- Demonstrated the feasibility of ML techniques in occupant behavior characterization with data from 5686 U.S. households
- Work published in the Energy & Buildings Journal, Elsevier, 2023

### Distributed, cost-effective, and, portable IoT data infrastructure

May 2022

- Developed e prototypes of IoT-based wireless sensing system and deployed 50+ sensing nodes to individual houses
- Collected and analyzed over 2 million records from deployed devices for research
- Work published in the Journal of Building Engineering, Elsevier, 2022

### Fully functional Star Trek model ship systems developed for TrekModeler

December 2021

- Developed entire software systems for multiple Star Trek model ships with Arduino
- Provided electrical circuit setup guidance for IR-controlled functionalities of model ships

### Exposing vulnerabilities of popular ML models with adversarial attack

December 2019

- Developed adversarial ML attack tool to expose vulnerabilities of facial recognition and road sign detection systems
- Utilized PyTorch library of Python with in-demand public datasets - CelebFaces, VGG-Face2, YOLOv3, and, Lisa

### Heavy aerial lifting multi-copter

December 2013

- Designed H-copter, X-copter, and, Hex-copter from scratch equipped with MultiWii flight controller
- Used Arduino and Raspberry Pi to do tasks like aerial photography, live object detection, and, object grab-release

## Skills

### Programming Languages

Python, Java, C, C#, PHP, JavaScript

### Databases

MySQL, MS-SQL, PostgreSQL

### Frameworks/Libraries

Pandas, Scikit-learn, PyTorch, ReactJS, JQuery, ASP.NET, OpenGL, OpenCV

### Tools

Git, Matlab, Android Studio, Visual Studio, Eclipse, PowerBi

## Achievements & Leadership

2021 **Secretary**, Association for Bangladeshi Students at Virginia Tech

Blacksburg, VA

2016 **Dean's Award**, all semesters at AUST

Dhaka, Bangladesh

2015 **2nd Position**, inter-university project show, BUET

Dhaka, Bangladesh

2014 **General Secretary & Vice Precedent**, Computer Science & Engineering Society, AUST

Dhaka, Bangladesh

2014 **1st Position**, inter-university project show, AUST

Dhaka, Bangladesh

2013 **1st Position**, in two intra-university project competitions, AUST

Dhaka, Bangladesh