OISHEE BINTEY HOQUE

oishee@virginia.edu | 937-739-9375 | Charlottesville, VA | https://oishee-hoque.github.io/ |www.linkedin.com/in/oishee-hoque

EDUCATION

PhD in Computer Science, *University of Virginia* **|** *Charlottesville, VA* *August 2021 - July 2026(Expected)*
Relevant Coursework: Machine Learning (ML), ML in Image Processing, Interpretable ML, Design and Analysis of Algorithms, NLP
Advisor: Dr. Madhav Marathe

BSc in Computer Science, *Ahsanullah University of Science and Technology | Dhaka, Bangladesh* *Aug* 2019

RESEARCH PUBLICATIONS

1. ***Oishee Bintey Hoque***; [13 other authors], "**COVID-19 non-pharmaceutical interventions: data annotation for rapidly changing local policy information**", **Scientific Data - Nature**, volume 10, Article number: 126 (2023).
2. Sifat Ahmed, Tonmoy Hossain, ***Oishee Bintey Hoque***, Sujan Sarker, Sejuti Rahman, Faisal Muhammad Shah, "**Automated COVID-19 Detection from Chest X-Ray Images: A High-Resolution Network (HRNet) Approach**", SN Computer Science,2(4): 294. 2021
3. ***Oishee Bintey Hoque***, Md Imrul Jubair, Al-Farabi Akash, Md Saiful Islam, "**BdSL36: A Dataset for Bangladeshi Sign Letters Recognition**", In Proceedings of the **Asian Conference on Computer Vision (ACCV), 2020**
4. ***Oishee Bintey Hoque***, Maisha Binte Rashid, K.M. Tawsik Zawad, "**Autonomous Deblurring Images and Information Extraction from Documents Using CycleGAN and Mask RCNN**", In Proceedings of the 23rd International Conference on Computer and Information Technology, Dhaka, Bangladesh (ICCIT 2020), Dhaka, Bangladesh.
5. ***Oishee Bintey Hoque***, Md. Imrul Jubair, Md. Saiful Islam, Al-Farabi Akash, "**Real Time Bangladeshi Sign Language Detection using Faster R-CNN**", In Proceedings of International Conference on Innovation in Engineering and Technology (ICIET), Dhaka, Bangladesh, 2018 (ICIET 2018)

EXPERIENCE

Graduate Research Assistant/Teaching Assistant, *University of Virginia* *Aug 2021 – Present*

Tech Stack: Python, Tensorflow, Pandas, NumPy, Matplotlib, Pytorch, FastAi, scikit-learn, OpenCV, QGIS, Jupyter Notebooks

Irrigation Canal Identification from Satellite Images

- Pioneering research in building novel machine learning algorithms to detect irrigation canals from remote sensing data
- Conceptualizing and developing a model to interpret irrigation canals as a graph network and understanding the topological structure of the network to refine the faulty ground and guide the model to learn better.
- Working on integrating connectivity and reachability constraints into segmentation algorithms to improve accuracy and reliability of canal detection models, with limited data sources.

Irrigation Type Detection from Remote Sensing Data

- Developing a deep learning system for irrigation mapping in a heterogeneous setting using advanced machine learning and AI techniques and algorithms
- Integrating alternative joint learning approaches to guide the segmentation model for better understanding the coarse features of irrigation types.

Graduate Research Assistant/Teaching Assistant, *University of Virginia* *Aug 2021 – Present*

- Teaching Assistant for undergraduate Mobile Application Development (Fall'22) and Machine Learning (Spring'23).

Research Intern, *USDA-NIFA/NSF AI Institute for Next Generation Food Systems (AIFS)* *Jun 2023 – August 2023*

Tech Stack: Python, Tensorflow, Pandas, NumPy, Matplotlib, Pytorch, FastAi, scikit-learn, OpenCV, QGIS, Jupyter Notebooks

- Trained and evaluated different segmentation models for detecting various irrigation types from remote sensing data, tackling heterogeneity in irrigation types within single fields, requiring advanced analysis and segmentation strategies.
- Processed and prepared the geospatial data to feed the segmentation model.

Software Engineer*, Enosis Solutions***,** *Dhaka, Bangladesh* *Aug 2020 – Aug 2021*

Tech Stack: C#, JS, SQL (MySQL, Oracle), MongoDB, React.js, Node.js, Express.js, MVC Framework, Git, Visual Studio

- Worked closely with teams of 6-8 on an Incident Management Tool which tracks different occurrences of an organization using C# and MVC Framework. All code was reviewed, perfected, and pushed to production.
- Designed and developed the full stack implementation of a web platform to train/test Machine Learning models.
- Collaborated effectively with members of the software development team and personnel in other departments.

EXTRA CURRICULAR ACTIVITIES

- Achieved **3rd Position** in **2023 AgAID Digital AgAth0n**
- Built algorithm problem-solving skill via solving problems in online judges and participating in competitive coding contests
- Served as Space and Media Chair, Computer Science Graduate Student Group (CSGSG) Council – 2022.
- Achieved 11th Position, National Girls Programming Contest-2016, Bangladesh. (Tech Stack: C/C++, CodeBlocks)

- Social Chair, Computer Science Graduate Student Group (CSGSG) Council – 2024