

Tashnim Jabir Shovon Chowdhury

tchowdh1@umbc.edu • +1 (419) 407-7396 •

- Website: <https://tashnimchowdhury.github.io>
- GitHub: <https://github.com/tashnimchowdhury>
- LinkedIn: <https://www.linkedin.com/in/tashnim-chowdhury>
- Google Scholar: <https://scholar.google.com/citations?user=8Gcf-GoAAAAJ&hl=en&oi=ao>

Education

University of Maryland, Baltimore County (UMBC)	BALTIMORE, MARYLAND, USA
PhD in Information Systems (pursuing)	Spring 2020 – Present
The University of Toledo	TOLEDO, OHIO, USA
MS in Electrical Engineering	Fall 2014 – Fall 2016
Chittagong University of Engineering & Technology	CHITTAGONG, BANGLADESH
BSc. in Electrical & Electronic Engineering	2008 – 2013

Experience

- Graduate Research Assistant, Bina Lab, UMBC:** January 2020 – Present
- Developed semantic segmentation techniques, and implemented on aerial imagery for natural disaster damage assessment.
 - Developed convolutional neural networks for ice layer tracking.
- Software Development Engineer II, Fluence Automation (Baltimore, MD):** July 2018 – December 2019
- Developed software for automated dumper and unloader system for books sorting using C++.
 - Using C++ developed software for mail processing sorting machine which uses mechanical divert.
 - Implemented three machine vision algorithms in Parcel Detection System using C++.
- Software Engineer, POST-IS (Baltimore, MD):** Mar 2017 – June 2018
- Optimized and developed tools in C++ for automating mail processing system. I was involved in adding new features in the system as well as making it dynamic. This software has interfaces with camera, scale, and a Linux control board.
 - Developed tool in C++ on Linux environment to control light intensity based on sensor's data in mail sorting system.
 - Developed tools in C# implementing data plotting, logger, and message exchanging test tool.
 - Created a data truthing application using Visual Basic. The data truthing tool allows the user to verify system's decision, and make true decision based on captured images.
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Skills

Programming Languages, Simulation & Design Tools: C, C++, Visual Basic, Python, PyTorch, MATLAB, R, Java, Assembly, HTML5.

Publications:

- **Tashnim Chowdhury**, Colin Elkin, Vijay Devabhaktuni, Jared Oluoch, and Danda B. Rawat, "Advances on Localization Techniques for Wireless Sensor Networks: A Survey," Computer Networks, Elsevier, 2016.
- **Tashnim Chowdhury**, Maryam Rahnemoonfar, Robin Murphy, and Odair Fernandes, "Comprehensive semantic segmentation on high resolution uav imagery for natural disaster damage assessment," 2020 IEEE International Conference on Big Data (Big Data).
- **Tashnim Chowdhury**, and Maryam Rahnemoonfar, "Attention For Damage Assessment," ICML 2021 Workshop Tackling Climate Change with Machine Learning.
- Debvrat Varshney, Masoud Yari, **Tashnim Chowdhury**, and Maryam Rahnemoonfar, "Refining Ice Layer Tracking through Wavelet combined Neural Networks," ICML 2021 Workshop Tackling Climate Change with Machine Learning.
- Maryam Rahnemoonfar, **Tashnim Chowdhury**, Argho Sarkar, Debvrat Varshney, Masoud Yari, and Robin Murphy, "Floodnet: A high resolution aerial imagery dataset for post flood scene understanding," in IEEE Access, vol. 9, pp. 89644-89654, 2021, doi: 10.1109/ACCESS.2021.3090981.

- **Tashnim Chowdhury**, and Maryam Rahnemoonfar, “*Attention Based Semantic Segmentation on UAV Dataset For Natural Disaster Damage Assessment*,” 2021 International Geoscience and Remote Sensing Symposium (IGARSS).
 - **Tashnim Chowdhury**, and Maryam Rahnemoonfar, “*Self Attention Based Semantic Segmentation on A Natural Disaster Dataset*,” 2021 IEEE International Conference on Image Processing (ICIP).
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Extra-Curricular Activities:

- Organize a computer vision challenge (link: <http://www.classic.grss-ieee.org/earthvision2021/challenge.html>) on EARTHVISION2021. This challenge was organized in conjunction with the Computer Vision and Pattern Recognition (CVPR) 2021 Conference.
 - Served as a paper reviewer for ICTAI 2021 (International Conference on Tools with Artificial Intelligence).
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Graduate Projects:

- Unsupervised semantic segmentation on UAV images.
- Semantic Segmentation Of CT Scans To Detect COVID-19.
- Attention Based Sentiment Analysis.
- Wavelet combined CNNs for Ice Layer Tracking.
- Implementation of Causal Inference for Semantic Segmentation.