## **Ahmed Tahseen Minhaz**

Phone: 216-334-0722 | Email: axm1287@case.edu

3795 Washington Park Blvd, Cleveland, OH 44105

**Professional Summary**

Highly skilled and motivated biomedical engineer with a strong background in developing advanced imaging systems and image analysis tools using AI. Experience in 3D ultrasound imaging, image enhancement, segmentation for clinical applications. Demonstrated success in research, publications, and conference presentations, with a commitment to innovation and improving healthcare outcomes.

**Education**

* PhD, Biomedical Engineering (2024), Case Western Reserve University
* M.Sc., Electrical and Electronic Engineering (2018), Bangladesh University of Engineering and Technology
* B.Sc., Electrical and Electronic Engineering (2016), Bangladesh University of Engineering and Technology

**Skills**

* Programming: Python (TensorFlow, PyTorch, scikit-learn), MATLAB, C/C++, R
* Visualization and control tools: Amira, 3D Slicer, LabVIEW
* Expertise in various image and signal modalities e.g., ultrasound, X-ray, CT, speech, and EEG

**Research and Professional Experience**

**Graduate Research Assistant**

**Biomedical Imaging Laboratory, Case Western Reserve University, 2018- Present**

* Developed a 3D ultrasound imaging system, and eye anatomy analysis tools (i.e., image enhancement, segmentation etc.) using AI for diagnosis and treatment monitoring.

**Computer Vision Researcher**

**Semion Inc., 2016-2018**

* Developed the first commercially available product in Bangladesh for chest X-ray screening based on deep learning approaches.

**Projects**

**Clinical 3D imaging of the anterior segment with ultrasound biomicroscopy**

* Led the development of a novel 3D ultrasound imaging system for improved eye disease diagnosis, treatment planning, and assessment. https://doi.org/10.1167/tvst.10.3.11

**3D ultrasound biomicroscopy image enhancement using generative adversarial networks**

* Developed 3D ultrasound biomicroscopy image enhancement approach using GAN for real-time clinical applications. https://doi.org/10.1117/12.2582128

**Deep Learning for Ciliary Body Analysis in 3D Ultrasound Biomicroscopy**

* Deep learning segmentation, visualization, and automated 3D assessment of ciliary body in 3D ultrasound biomicroscopy images. https://doi.org/10.1167/tvst.11.10.3

**Whole eye imaging and analysis of ocular injury using 3D ultrasound**

* Developed a clinical alternative imaging approach for whole eye imaging and analysis of intraocular foreign body using 3D ultrasound.

**Deep learning for non-contrast ultrasound microvascular imaging**

* Developed an end-to-end deep neural network approach for tuning-free non-contrast ultrasound microvessel imaging. https://doi.org/10.1109/IUS54386.2022.9958473

**semRAD: Chest X-ray screening software**

* Developed AI enabled chest X-Ray screening software that identified and localized abnormalities. https://arxiv.org/abs/1705.09850

**Patents**

"Processing three-dimensional (3D) ultrasound images", US Patent No. 20210383548A1.

**Leadership**

President, Bangladeshi Students Association at CWRU (2019-2021)