

Khondker Fariha Hossain

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EDUCATION	Ph.D. in Computer Science and Engineering University of Nevada, Reno	2021 – Present
	M. Sc. in Computer Science and Engineering University of Nevada, Reno	2021 – 2022
	Master of Data Science Deakin University, Australia	2019 – 2020
	B.Sc. in Computer Science and Engineering BRAC University, Bangladesh	2013 – 2017
WORK EXPERIENCE	Artificial Intelligence/Machine Learning Engineer Intern, Ford Motor Company ; Melbourne, Australia ■ Worked as a Team Lead(interns) to create a hierarchical Graphical Network of organization Members. ■ Implemented "Streamlit" for the dynamic visualization of the Machine Learning Model and the Graphical Network. ■ Researched on "Oracle Digital Assistance" to create an Economical and Organizational suitability report emphasizing on the Policy Maker and Technical perspective. Tools: Tensorflow, Pandas, NumPy, Keras, Streamlit	Aug 2020 – Oct 2020
	Software Engineer Intern, Kyoto Engineering and Automation Ltd. <i>Dhaka, Bangladesh</i> ■ Worked in 2 Software (Platform : .NET ; Language : C#) ■ Worked with SAP Crystal Reports in Visual Studio ■ Server : Microsoft SQL Server (Level :Basic , Language : SQL) ■ Rectified and Created Official Website's Pages (Language : HTML & PHP)	Oct 2017 – Dec 2017
ACADEMIC EXPERIENCE	Graduate Research Assistant Department of Computer Science; <i>University of Nevada, Reno</i> ■ Working on a collaborative project with Neuromechanics Lab (UNR) for Sideline Concussion Assessment with Virtual Reality using Machine Learning models. ■ Working on a collaborative project to Detect mass from mammogram images. Tools: Tensorflow, Pandas, NumPy, Keras, OpenCV.	Jan 2021 – Present
	Graduate Teaching Assistant Department of Computer Science; <i>University of Nevada, Reno</i> Course: CS 302- Data Structure Course: CS791 Topics- Mass Detection in Mammograms Course: CPE 201- Digital Design	Jan 2021 – Present
	Mentor Research & Engineering Apprenticeship Program (REAP) <i>US Army Educational Outreach Program</i>	Jul 2021 – Aug 2021
	Researcher Fab Lab <i>Independent University Bangladesh (IUB), Dhaka, Bangladesh.</i>	Jun 2018 – Dec 2018

- Collected and curated dataset for Bengali.AI Handwritten Grapheme Classification Challenge 2019 hosted by **Kaggle**
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PUBLICATIONS

CONFERENCES

- [1] SWIN-SFTNet: Spatial Feature Expansion and Aggregation using Swin Transformer For Whole Breast micro-mass segmentation, accepted in *20th IEEE International Symposium on Biomedical Imaging, 2023 (ISBI)* [Equal contribution].
- [2] ECG-Adv-GAN: Detecting ECG Adversarial Examples with Conditional Generative Adversarial Networks, accepted for **Oral Presentation** in *20th International Conference on Machine Learning and Applications 2021 (ICMLA)* [First Author].
- [3] A Game theoretical Approach for Adversarial Attack on Deep Learning based Cyber Domain, in *17th International Symposium on Visual Computing (ISVC) 2022* [First Author]
- [4] ECG-ATK-GAN: Robustness against Adversarial Attacks on ECG using Conditional Generative Adversarial Networks, in *Applications of Medical AI (AMAI) at MICCAI 2022* [First Author]
- [5] Virtual-Reality based Vestibular Ocular Motor Screening for Concussion Detection using Machine-Learning, in *17th International Symposium on Visual Computing (ISVC) 2022* [First Author]
- [6] Feature Representation Learning for Robust Retinal Disease Detection from Optical Coherence Tomography Images, in *Ophthalmic Medical Image Analysis(OMIA9) at MICCAI 2022*
- [7] VTGAN: Semi-supervised Retinal Image Synthesis and Disease Prediction using Vision Transformers, in *Proceedings of the IEEE/CVF International Conference on Computer Vision Workshops 2021 (ICCVW)*.
- [8] RV-GAN: Retinal Vessel Segmentation from Fundus Images using Multi-scale Generative Adversarial Networks, in *24th International Conference on Medical Image Computing and Computer Assisted Intervention 2021 (MICCAI)*.
- [9] Attention2AngioGAN: Synthesizing Fluorescein Angiography from Retinal Fundus Images using Generative Adversarial Networks, in *25th IEEE International Conference on Pattern Recognition 2020 (ICPR)*.
- [10] Fundus2Angio: A Novel Conditional GAN Architecture for Generating Fluorescein Angiography Images from Retinal Fundus Photography, in *15th International Symposium on Visual Computing 2020 (ISVC)*.

JOURNALS

- [1] New open-source software for subcellular segmentation and analysis of spatiotemporal fluorescence signals using deep learning, in **Journal Article. iScience 2022.**
- [2] A Novel Deep Learning Conditional Generative Adversarial Network for Producing Angiography Images from Retinal Fundus Photographs, 2021, in *Scientific Reports.*, 10, 21580.
- [3] Denoising Calcium Signals (Spatial-temporal Maps) using Mathematical Noise Modeling, 2021, in *IScience*. **Under Review**

POSTER PRESENTATION

- Hossain, Khondker Fariha, Tanzila Jamil and Samiul Islam “X-Ray (2D) and CT-Scanned (3D) Image Matching for Person Identification“ in *7th International Conference on Informatics, Electronics & Vision 2018 (ICIEV), IEEE.*

SKILLS	<ul style="list-style-type: none">■ Programming Languages: C++,C#, Python,R, Java, Matlab, HTML-CSS, Git■ Libraries: OpenCV, Scikit-learn, Numpy, Pandas, Keras, Tensorflow, Streamlit, VS Code, Tensorboard, Apache Spark■ Systems: Linux OS, Slurm, Windows
AWARD	<p>Graduate Dean’s Merit Scholarship, Oct 2022</p> <ul style="list-style-type: none">■ Received Dean’s Merit Scholarship 2022 <p>Outstanding International Graduate Student, Apr 2022</p> <ul style="list-style-type: none">■ Received GSA Spring Award 2022 <p>GR IM Access Grant</p> <ul style="list-style-type: none">■ Received Institutional Methodology Grant in January 2021, 2022 <p>NIH-MICCAI 2021 Participation Award, Jun 2021</p> <ul style="list-style-type: none">■ The Medical Image Computing and Computer Assisted Interventions Society
REFERENCE	Available upon request.
