Prithul Sarker

Email: prithulsarker@nevada.unr.edu
LinkedIn: linkedin.com/in/prithulsarker/
Github | Google Scholar | Leetcode | HackerRank
Portfolio: prithulsarker.me/
Reno, NV | (775) 460 – 8039

Technical Skills

- Programming Language: Python, R, C++, MATLAB, SQL
- Deep/ Machine Learning Libraries: Tensorflow, Keras, PyTorch, Pandas, Numpy, Matplotlib, Scikit-learn
- Designing Tools: AutoCAD, EAGLE
- Research Area: Computer Vision, Virtual Reality, Artificial Intelligence in Healthcare

Education

University of Nevada, Reno
Reno, Nevada, United States of America
January 2021 - Present
Second year Ph.D. Student – GPA: 4.0/ 4.0
Major: Computer Science

Bangladesh University of Engineering and Technology
Dhaka, Bangladesh
February 2013 – September 2017
Bachelor of Science – GPA: 3.48/ 4.0
Major: Electrical and Electronic Engineering

Professional Courses

1. Social Behavioral Research Investigators and Key Personnel Group- CITI Program
2. Customer Discovery Training - Bay Area Regional NSF I-Corps Node - UC Berkeley
3. Customer Discovery – National NSF I-Corps Node – New York Hub
4. Deep Learning Specialization- Coursera

Test Score

1. GRE- 323 (Quant: 168, Verbal: 155)
2. IELTS- 7 (Speaking: 7)

Experience

Graduate Research Assistant
January 2021 – Present
Department of Computer Science, University of Nevada, Reno

- Led my own research, implemented an ophthalmic assessment in virtual reality, gathered control and patient data, analyzed data gathered from the assessment to predict and quantify defect in participants.
- Participated in NSF I-Corps national program with our research technology and was awarded $50,000 for customer discovery process.
- Developed a novel deep learning architecture to segment mass from full mammographic image. The architecture currently beats any other known architecture in terms of dice and Jaccard score.
- Collaborated and coordinated with Neuromechanics Lab on detection of concussion symptom from vestibular and ocular data collected through virtual reality (VR) headset using neural network architectures.
- Assembled electrical components, programmed, and implemented an ophthalmic assessment using Arduino and Pupil Core (from Pupil Labs), and conducted a research study to get pupillomotor data under various instances and analyzed the data to predict eye conditions.

Education Mentor
May 2021 – August 2021 & June 2022 – August 2022
Army Educational Outreach Program (AEOP)

- Mentored five high school students to increase enthusiasm to research. They helped in one of my research projects by preprocessing the data, and by implementing multiple machine and deep learning models.

Team Lead / Senior Software Quality Assurance Engineer
January 2020 – December 2020
Software Quality Assurance Engineer
June 2019 – December 2019
EchoLogyx Ltd., Dhaka, Bangladesh

- Led the QA team in client meetings and created a positive and strong relationship with the clients.
- Designed and wrote script for QA automation.
- Scraped data from the client website and listed essential information.

Product Officer
July 2018 – May 2019
Loence Solution, Dhaka, Bangladesh

- Researched local and international ERP market and assessed competition by comparing products.

Assistant Engineer (Electrical)
November 2017 – June 2018
Energypac Engineering Ltd., Dhaka, Bangladesh

- Carried out test procedures ensuring that substation equipment works to its specification.
- Investigated issues, and troubleshot faults in the electrical system of transformers and other safety equipment.

Publications

1. **Prithul Sarker**, Sushmita Sarker, George Bebis, Alireza Tavakkoli, "ConnectedUNets++: Mass Segmentation from Whole Mammographic Images" [https://arxiv.org/abs/2210.13668]
2. **Prithul Sarker**, Nasif Zaman, Alireza Tavakkoli, "VR-SFT: Reproducing Swinging Flashlight Test in Virtual Reality to Detect Relative Afferent Pupillary Defect" [https://arxiv.org/abs/2210.06474]
3. **Prithul Sarker**, Khondker Fariha Hossain, Isayas Adhanom, Philip Pavilionis, Nicholas Murray, Alireza Tavakkoli, "Analysis of Smooth Pursuit Assessment in Virtual Reality and Concussion Detection using BiLSTM" [https://arxiv.org/abs/2210.11238]
4. Khondker Fariha Hossain, Sharif Amit Kamran, **Prithul Sarker**, Philip Pavilionis, Isayas Adhanom, Nicholas Murray, Alireza Tavakkoli, "Virtual-Reality based Vestibular Ocular Motor Screening for Concussion detection using Machine-learning" [https://arxiv.org/abs/2210.09295]
5. **Prithul Sarker**, Alireza Tavakkoli, "An Arduino-based Lightweight and Reliable Solution to Detect Relative Afferent Pupillary Defect" (Abstract accepted, yet to be published)
6. Alireza Tavakkoli, Nasif Zaman, **Prithul Sarker**, "Calibration of Head Mounted Displays for Vision Research with Virtual Reality" (Paper submitted to journal)
7. **Prithul Sarker**, Joshua Ong, Nasif Zaman, Sharif Amit Kamran, Ethan Waisberg, Phani Paladugu, Andrew G. Lee, Alireza Tavakkoli "Extended Reality Quantification of Pupil Reactivity as a Non-Invasive Assessment for the Pathogenesis of Spaceflight Associated Neuro-ocular Syndrome" (Paper submitted to journal)
8. **Prithul Sarker**, Joshua Ong, Nasif Zaman, Sharif Amit Kamran, Ethan Waisberg, Phani Paladugu, Andrew G. Lee, Alireza Tavakkoli, "Investigating the Pathogenesis of Spaceflight Associated Neuro-ocular Syndrome with Head-mounted Visualization Engineering of Pupil Reactivity" (Abstract submitted)

Undergraduate Thesis

Statistical Modeling of Effluent Generated from the Proposed Rampal Power Plant for the Assessment of Environmental Impact

- The primary objective of the thesis was to ensure less emission of SOx and NOx compared to subcritical and supercritical technologies.
- Analyzed and interpreted the direction of wind of that locality to ensure the prevention of the mangrove forest from the power plant generated SOx and NOx emissions.