

Prithul Sarker

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Portfolio: <https://prithulsarker.com/> | [Google Scholar](https://scholar.google.com/citations?user=prithuls)

EDUCATION

University of Nevada, Reno <i>Ph.D. in Computer Science</i>	Reno, NV Jan. 2021 – Dec. 2024
University of Nevada, Reno <i>MS in Computer Science</i>	Reno, NV Jan. 2021 – May 2023
Bangladesh University of Engineering and Technology <i>BS in Electrical and Electronic Engineering, Minor in Telecommunication</i>	Dhaka, Bangladesh Feb. 2013 – Sep. 2017

TECHNICAL SKILLS

Languages/Platforms: Python, R, C++, MATLAB, SQL, JavaScript, Bash, Docker
Python Libraries: Tensorflow, PyTorch, JAX, Pandas, Numpy, Matplotlib, Scikit-learn, Selenium
Research Area: Time Series Analysis, Pupillometry in Virtual Reality, Applied AI in Healthcare, Computer Vision

SUMMER INTERNSHIP

Ph.D. Software Engineer Intern <i>Google Research- Health AI</i>	May 2024 – Present Mountain View, CA
<ul style="list-style-type: none">Temporal modeling of geospatial data with population and environmental factors to forecast disease progression.	
Software Developer Intern <i>SGX3- Science Gateways (Texas Advanced Computing Center, University of Texas at Austin)</i>	June 2023 – Aug. 2023 Austin, TX
<ul style="list-style-type: none">Developed applications for Frontera- world's fastest university supercomputer and 13th fastest supercomputer.Created interactive applications in HPC framework through remote desktop connections (i.e. VNC and DCV).Packaged HPC applications into docker and singularity applications and making it compatible with AI framework.	
Education Mentor <i>Army Educational Outreach Program (AEOP)</i>	May 2021 – Aug. 2021 & June 2022 – Aug. 2022 Reno, NV

EXPERIENCE

Graduate Research Assistant <i>University of Nevada, Reno</i>	Jan. 2021 – Present Reno, NV
<ul style="list-style-type: none">Utilized machine learning and score-based generative modeling to predict concussion and quantify vision defects.Employed transformer and score-based generative modeling to classify and segment breast mass of mammograms.Secured a \$50,000 grant as recognition for our innovation of VR based ophthalmic assessment tool.	
Team Lead / Senior Software Quality Assurance Engineer Software Quality Assurance Engineer <i>EchoLogyx Ltd.</i>	Jan. 2020 – Dec. 2020 June 2019 – Dec. 2019 Dhaka, Bangladesh
<ul style="list-style-type: none">Led the team to create a positive relationship with the clients contributing to 160% company growth in year 2020.Designed and wrote script for QA automation and scraping data from the client website.	
Product Officer <i>Loence Solution</i>	July 2018 — May 2019 Dhaka, Bangladesh
<ul style="list-style-type: none">Researched market and designed features and infrastructure of the enterprise resource planning (ERP) web app.	
Assistant Engineer (Electrical) <i>Energypac Engineering Ltd.</i>	Nov. 2017 – June 2018 Dhaka, Bangladesh
<ul style="list-style-type: none">Investigated issues, and troubleshot faults in the electrical system of transformers and other substation equipment.	

TEACHING EXPERIENCE

Instructor- GRAD778: Elements of Research Computing <i>University of Nevada, Reno</i>	Fall 2023 Reno, NV
<ul style="list-style-type: none">Structured lessons for 70 grad students on fundamental concepts of Linux OS and Python programming.	
Teaching Assistant- CS791 Topics: Mass Detection in Mammograms <i>University of Nevada, Reno</i>	Fall 2023 Reno, NV

PROJECTS

Multi-View Mammogram Classification with Swin-Transformer <i>PyTorch</i> GitHub	June 2023 - Jan 2024
Video Maker Bot <i>Python, Selenium, YouTube API, Google Text-to-Speech</i> GitHub Demo	Oct. 2022 – Present
• Developed a bot that makes video in Bengali from Facebook posts using google voice and uploads in social media.	
ChatGPT Code Snippet Extension <i>JavaScript, HTML, CSS</i> GitHub	Feb 2023 – Present
VR-Chess <i>C++, Unreal Engine</i> GitHub	Jan. 2022 – June 2022
Bangladeshi Student Association Website <i>CSS</i> GitHub Demo	Jan. 2022 – Present
Social Media Interaction Bot <i>Python, Selenium, HTML</i> GitHub	Feb. 2020 – May 2020
Face Recognition in Real Time Video <i>Python, OpenCV</i> GitHub	Oct. 2019 – Mar. 2020

SELECTED PUBLICATIONS

- Prithul Sarker**, Sushmita Sarker, George Bebis, Alireza Tavakkoli, “MV-Swin-T: Mammogram Classification with Multi-view Transformer”, [IEEE International Symposium on Biomedical Imaging \(Conference 2024\)](#)
- Prithul Sarker**, Nasif Zaman, Joshua Ong, Phani Paladugu, Molly Aldred, Ethan Waisberg, Andrew G. Lee, Alireza Tavakkoli, “Test-retest Reliability of Virtual Reality Devices in Quantifying for Relative Afferent Pupillary Defect”, [Translational Vision Science & Technology \(Journal 2023\)](#)
- Prithul Sarker**, Nasif Zaman, Alireza Tavakkoli, “VR-SFT: Reproducing Swinging Flashlight Test in Virtual Reality to Detect Relative Afferent Pupillary Defect”, [International Symposium on Visual Computing \(Conference 2022\)](#)
- 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: A Technology Validation Study for Astronaut Health”, [Life Sciences in Space Research \(Journal 2023\)](#)
- 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”, [International Symposium on Visual Computing \(Conference 2022\)](#)
- Prithul Sarker**, Sushmita Sarker, George Bebis, Alireza Tavakkoli, “ConnectedUNets++: Mass Segmentation from Whole Mammographic Images”, [International Symposium on Visual Computing \(Conference 2022\)](#)
- Joshua Ong, Ethan Waisberg, Mouayad Masalkhi, Alex Suh, Sharif Amit Kamran, Phani Paladugu, **Prithul Sarker**, Nasif Zaman, Alireza Tavakkoli, Andrew G. Lee, “Spaceflight-to-Eye Clinic”: Terrestrial Advances in Ophthalmic Healthcare Delivery from Space-Based Innovations”, [Life Sciences in Space Research \(Journal 2024\)](#)
- Ethan Waisberg, Joshua Ong, Mouayad Masalkhi, Sharif Amit Kamran, Nasif Zaman, **Prithul Sarker**, Andrew G Lee, Alireza Tavakkoli, “GPT-4: A New Era of Artificial Intelligence in Medicine”, [Irish Journal of Medical Science \(2023\)](#)
- Joshua Ong, Ethan Waisberg, Sharif Amit Kamran, Phani Paladugu, Nasif Zaman, **Prithul Sarker**, Alireza Tavakkoli, Andrew G. Lee, “Deep Learning Synthetic Angiograms for Individuals Unable to Undergo Contrast-guided Laser Treatment in Aggressive Retinopathy of Prematurity”, [Nature Eye \(Journal 2023\)](#)
- Nasif Zaman, **Prithul Sarker**, Alireza Tavakkoli, “Calibration of Head Mounted Displays for Vision Research with Virtual Reality”, [Journal of Vision](#)
- Sushmita Sarker, **Prithul Sarker**, Gunner Stone, Ryan Gorman, Alireza Tavakkoli, George Bebis, Javad Sattarvand, “A Comprehensive Overview of Deep Learning Techniques for 3D Point Cloud Classification and Semantic Segmentation”, [Machine Vision and Applications \(Journal 2024\)](#)
- Ethan Waisberg, Joshua Ong, Mouayad Masalkhi, Nasif Zaman, **Prithul Sarker**, Andrew G Lee, Alireza Tavakkoli, “The Future of Ophthalmology and Vision Science with the Apple Vision Pro”, [Nature Eye \(Journal 2023\)](#)

AWARDS

Outstanding International Graduate Student Award <i>University of Nevada, Reno - Graduate Student Association</i>	Spring 2024 <i>Reno, NV</i>
NSF National Innovation Corps (I-Corps™) program <i>Entrepreneurial Training Program (Seven weeks) (\$50,000 Awarded)</i>	July 2022 – Sep. 2022 <i>New York City, NY</i>
Undergraduate Student Merit Scholarship <i>Bangladesh University of Engineering and Technology</i>	Feb. 2013 – Sep. 2017 <i>Dhaka, Bangladesh</i>