Sharif Amit Kamran

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EDUCATION

PhD. in Computer Science and Engineering — **CGPA**: 3.7 / 4.0
University of Nevada, Reno — Aug 2019 – Present

Ms. in Computer Science and Engineering — **CGPA**: 3.63 / 4.0
University of Nevada, Reno — Aug 2019 – Dec 2020

Bsc. in Computer Science and Engineering — **CGPA**: 3.45 / 4.0
BRAC University, Bangladesh — Jan 2013 – Apr 2017

WORK EXPERIENCE

Graduate Research Assistant, University of Nevada, Reno — Aug 2019 – Present
Department of Computer Science and UNR school of Medicine

- Working with Dr. Alireza Tavakkoli on NASA and DOD funded projects for mapping identifying space-associated retinal degenerative diseases in astronauts and enhanced visual perception using Deep Learning and Generative Networks.
- Working with Dr. Sal baker on on NIDDK (NIH) funded project on creating softwares and tools for automated extraction and quantification of calcium transient signals from calcium imaging videos.

Intern, Personalized Healthcare Imaging, Genentech Inc. — May 2021 – Dec 2021
South San Francisco, CA, USA

- Built a image-to-image translation GAN for synthesizing Opitcal Coherence Tomography Images acquired from Zeiss and Spectralis OCT.
- Created two convolutional neural network architectures for identifying between placebo and treatment arm for Ranibizumab (Lucentis) and Faricimab. The drugs are for treating Wet Age-related Macular Degeneration (AMD) and Diabetic Macular Edema (DME).
- Built deep regression network for estimating the growth rate of Geographical Atrophy (GA).

Researcher, Center for Cognitive Skill Enhancement — May 2017 – Jun 2019
Independent University Bangladesh (IUB), Dhaka, Bangladesh.

- Worked on two projects for semantic segmentation of natural scenes and traffic sign recognition.

SKILLS

- **Programming Languages:** C++, Python, Java, Bash (Shell Scripting), Matlab, HTML-CSS, Git, PHP
- **Libraries:** OpenCV, Scikit-learn, SimpleITK, Numpy, Caffe, Keras, Tensorflow, CoreML, ImageJ, Streamlit, LabelMe, VS Code, Tensorboard, Weights & Biases.
- **Systems:** Linux OS, Google Cloud Platform, Slurm, Docker, Singularity

SELECTED PUBLICATIONS

JOURNALS

[J1] A Novel Deep Learning Conditional Generative Adversarial Network for Producing Angiography Images from Retinal Fundus Photographs, 2021, in *Scientific Reports.*, 10, 21580.

[J2] A High Throughput Machine-Learning Driven Analysis of Ca 2+ Spatio-temporal Maps, 2020, in *Cell Calcium, 91*, p.102260.

CONFERENCE PROCEEDINGS

[C1] ECG-ATK-GAN: Robustness against Adversarial Attacks on ECG using Conditional Generative Adversarial Networks in *ICASSP 2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. **Under Review**

[C2] 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)*.

[C3] 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)*.

[C4] Improving Robustness using Joint Attention Network For Detecting Retinal Degeneration From Optical Coherence Tomography Images in *27th IEEE International Conference on Image Processing 2020 (ICIP)*.