Sharif Amit Kamran

skamran@nevada.unr.edu • +(1) 929-418-7223 • sharifamit.com • Github:SharifAmit • linkedin.com/in/sharif-a-b15004105

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, USA — Aug 2019 – Present

- Working on NASA and DOD funded projects for identifying space-associated retinal degenerative diseases in astronauts and mapping enhanced visual perception using Multi-modal Generative Networks.
  Tools: Tensorflow, Pandas, NumPy, Keras, Weights & Biases, OpenCV.
  Project Codes: Vision-Transformer GAN, RV-GAN, Robust-Attention-Network, OpticNet-71
- Working on NIDDK (NIH) funded project on creating software and tools for automated extraction and quantification of calcium signals from calcium imaging videos using self-supervised learning.
  Tools: Tensorflow, Streamlit, NumPy, Keras, OpenCV, LabelMe, ImageJ.
  Project Codes: 4SM, STMapAuto

Intern, Personalized Healthcare Imaging, Genentech Inc., USA — May 2021 – Dec 2021

- Built a training and inference pipeline for a novel image-to-image translation GAN for synthesizing vendor-specific Optical Coherence Tomography (OCT) Images acquired from Zeiss and Spectralis.
  Tools: SimpleITK, Tensorflow, Slurm, SciPy, Pandas, OpenCV, Docker.
- Designed and evaluated multi-modal ML and CNN architectures for identifying between placebo and treatment arm for Ranibizumab (Lucentis) and Faricimab using Fundus and OCT-enface images. The drugs are for treating Wet Age-related Macular Degeneration (AMD) and Diabetic Macular Edema (DME).
  Tools: Tensorflow, Keras, Scikit-learn, NumPy, Pillow, Tensorboard, Docker.
- Built a multi-modal regression network for estimating the growth rate of Geographical Atrophy (GA).
  Tools: Tensorflow, Slurm, Scikit-learn, NumPy, Pandas, OpenCV, Tensorboard.

Researcher, Center for Cognitive Skill Enhancement, Dhaka, Bangladesh — May 2017 – Jun 2019

- Designed an efficient fully-convolutional architecture for semantic segmentation with 37% less parameters and $2\times$ inference speed. The model was benchmarked on Pascal-VOC, Pascal-context, and NYUDv2 data.
  Tools: Caffe, Keras, GCP, CoreML, NumPy, OpenCV, LabelMe.
  Project Code: Dilated-FCN

SKILLS

- **Programming Languages:** Python, C++, Bash (Shell Scripting), MySQL, Git, Matlab, HTML-CSS.
- **Packages:** OpenCV, Scikit-learn, SimpleITK, NumPy, Pandas, Pillow, SciPy, Caffe, Keras, Tensorflow, CoreML, ImageJ, Streamlit, Rest API, LabelMe, VS Code, PySpark, Tensorboard, GCP, Slurm, Docker.

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] 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)*.

[C2] 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)*.

[C3] 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)*.

Detailed list of publications : Google Scholar