# Sharif Amit Kamran

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**EDUCATION**

**PhD. in Computer Science and Engineering** (M.S. leading to PhD.)    **CGPA**: 3.5 / 4.0

University of Nevada, Reno    Aug 2019 – Present

**Ms. in Computer Science and Engineering**    **CGPA**: 3.5 / 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

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**PUBLICATIONS**

### BOOK CHAPTER

[1] A Comprehensive Set of Novel Residual Blocks for Deep Learning Architectures for Diagnosis of Retinal Diseases from Optical Coherence Tomography Images, 2020, *Book Chapter, in Deep Learning Vol 2., Springer Nature.*

### JOURNALS

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

[2] Denoising Calcium Signals (Spatial-temporal Maps) using Mathematical Noise Modeling, 2020, in *PLoS Computational Biology.* **Under Review**

[3] GANgioNet: A Novel Deep Learning Conditional Generative Adversarial Network for Producing Angiography Images from Retinal Fundus Photographs, 2020, in *Scientific Reports.* **Under Review**

### CONFERENCES

[1] RV-GAN: Retinal Vessel Segmentation from Fundus Images using Multi-scale Generative Adversarial Networks, in *In The IEEE Winter Conference on Applications of Computer Vision 2020 (WACV).* **Under Review**

[2] Attention2AngioGAN: Synthesizing Fluorescein Angiography from Retinal Fundus Images using Generative Adversarial Networks, in *25th IEEE International Conference on Pattern Recognition 2020 (ICPR).*

[3] Fundus2Angio: A Novel Conditional GAN Architecture for Generating Fluorescein Angiography Images from Retinal Fundus Photography, in *15th International Symposium on Visual Computing. ISVC 2020.*

[4] 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).*

[5] Optic-Net: A Novel Convolutional Neural Network for Diagnosis of Retinal Diseases from Optical Tomography Images, in *18th IEEE International Conference on Machine Learning and Applications 2019 (ICMLA).*

[6] Total Recall: Understanding Traffic Signs using Deep Hierarchical Convolutional Neural Networks, in *21st IEEE International Conference on Computer and Information Technology 2018 (ICCIT)*

[7] Efficient Yet Deep Convolutional Neural Networks for Semantic Segmentation, in *IEEE International Symposium on Advanced Intelligent Informatics 2018 (SAIN)*

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**WORK EXPERIENCE**

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

**Co-Founder**, Bengali.AI    Apr 2018 – Present
*Dhaka, Bangladesh*

**Mentor**, Research & Engineering Apprenticeship Program (REAP)    Jun 2020 – Aug 2020
*US Army Educational Outreach Program*

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

## SKILLS

- **Programming Languages:** C++, Python, Java, Bash (Shell Scripting), Matlab, HTML-CSS, Git, PHP
- **Libraries:** OpenCV, Scikit-learn, Numpy, Caffe, Keras, Tensorflow, PyTorch, CoreML, ImageJ.
- **Systems:** Linux OS, Google Cloud Platform (Compute Engine & App Engine)

## PROJECTS

### Self-supervised Contrastive learning
- Working on a self-supervised energy based model for various semantic segmentation and medical image segmentation tasks using contrastive learning.

### Semi-supervised multi-modal learning
- Working on a semi-supervised GAN for detecting calcium transient events using temporal and visual information from videos.

### Conditional Generative Adversarial Networks
- Implemented an attention-based generative adversarial networks for synthesizing Fluroscien Angiography from Retinal Fundus Photography.

### Automated Denoising and Segmentation using Deep Learning
- Created a pipeline for Ca2+ spatio-temporal map generation, denoising and segmentation using deep learning.

### Traffic Sign Recognition
- Achieved state-of-the-art results for road traffic sign recognition using deep residual neural network network for German and Belgian Traffic sign data-set.

### Dilated Fully Convolutional Neural Networks (D-FCN)
- Implemented a FCN using dilated convolution and multi-scale skip connections for semantic segmentation and participated in University of Oxford's Pascal-VOC 2012 challenge.

## ACADEMIC SERVICES

**Reviewer**     2019 – Present
- BMVC-2020, WACV-2020, ICRA-2019, Sensors, IJAIT

**Graduate Teaching Assistant**     Jan 2020 – May 2020
- CS491/CS691 Deep Learning

## AWARDS & GRANTS

**Grant**, National Aeronautics and Space Administration (NASA)     Oct 2020 – Sep 2021
- **Role:** Graduate Research Assistant
- **Program:** Human Exploration Research Program
- **Title:** A Non-intrusive Ocular Monitoring Framework to Model Ocular Structure and Functional Changes due to Long-term Space flight

**Graduate Dean's Merit Scholarship**,     Aug 2019 – May 2020
- Fall 2019 and Spring 2020

**Best Paper Award**,     Aug 2018
- 2018 International Symposium on Advanced Intelligent Informatics (SAIN)

## SELECTED COURSEWORKS

Algorithms, Linear Algebra, Statistics and Probability, Machine Learning, Deep Learning, Computer Vision, Image Processing, Database Systems

## REFERENCES

- **Dr. Alireza Tavakkoli**
  Associate Professor, Department of Computer Science and Engineering
  University of Nevada, Reno, NV, 89557
  Email: tavakkol@unr.edu

- **Dr. Sal Baker**
  Associate Professor, Department of Physiology and Cell Biology
  University of Nevada, Reno, NV, 89557
  Email: sabubaker@med.unr.edu