

Sharif Amit Kamran

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EDUCATION

PhD. in Computer Science and Engineering

University of Nevada, Reno

CGPA: 3.7 / 4.0

Aug 2019 – Present

Ms. in Computer Science and Engineering

University of Nevada, Reno

CGPA: 3.63 / 4.0

Aug 2019 – Dec 2020

Bsc. in Computer Science and Engineering

BRAC University, Bangladesh

CGPA: 3.45 / 4.0

Jan 2013 – Apr 2017

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, Volume 2., p.25-48, Springer.*

JOURNALS

- [1] VTGAN: Semi-supervised Retinal Image Synthesis and Disease Prediction using Vision Transformers, 2021, in *IEEE Transactions on Medical Imaging*. **Under Review**
- [2] CalciumGAN: Segmenting Spatio-temporal map using multi-scale generative adversarial networks, 2021, in *Elife*. **Under Review**
- [3] Denoising Calcium Signals (Spatial-temporal Maps) using Mathematical Noise Modeling, 2021, in *IScience*. **Under Review**
- [4] A Novel Deep Learning Conditional Generative Adversarial Network for Producing Angiography Images from Retinal Fundus Photographs, 2020, in *Scientific Reports.*, 10, 21580.
- [5] A High Throughput Machine-Learning Driven Analysis of Ca²⁺ Spatio-temporal Maps, 2020, in *Cell Calcium*, 91, p.102260.

CONFERENCES

- [1] RV-GAN: Retinal Vessel Segmentation from Fundus Images using Multi-scale Generative Adversarial Networks, 2021, in *24th International Conference on Medical Image Computing and Computer Assisted Intervention*, 2021, Springer. **Under Review**
- [2] ECG-Adv-GAN: Detecting ECG Adversarial Examples with Conditional Generative Adversarial Networks, 2021, in *24th International Conference on Medical Image Computing and Computer Assisted Intervention*, 2021, Springer. **Under Review**
- [3] Attention2AngioGAN: Synthesizing Fluorescein Angiography from Retinal Fundus Images using Generative Adversarial Networks, in *25th IEEE International Conference on Pattern Recognition 2020 (ICPR)*.
- [4] Fundus2Angio: A Novel Conditional GAN Architecture for Generating Fluorescein Angiography Images from Retinal Fundus Photography, in *15th International Symposium on Visual Computing 2020 (ISVC)*.
- [5] 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)*.
- [6] 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)*.
- [7] Total Recall: Understanding Traffic Signs using Deep Hierarchical Convolutional Neural Networks, in *21st IEEE International Conference on Computer and Information Technology 2018 (ICCIT)*.
- [8] Efficient Yet Deep Convolutional Neural Networks for Semantic Segmentation, in *IEEE International Symposium on Advanced Intelligent Informatics 2018 (SAIN)*.

WORK EXPERIENCE	Product Development Intern , Genentech Inc. <i>South San Francisco, CA, USA</i>	May 2021 – Present
	Graduate Research Assistant , University of Nevada, Reno <i>Department of Computer Science and UNR school of Medicine</i>	Aug 2019 – Present
	Co-Founder , Bengali.AI <i>Dhaka, Bangladesh</i>	Apr 2018 – Present
	Mentor , Research & Engineering Apprenticeship Program (REAP) <i>US Army Educational Outreach Program</i>	Jun 2020 – Aug 2020
	Researcher , Center for Cognitive Skill Enhancement <i>Independent University Bangladesh (IUB), Dhaka, Bangladesh.</i>	May 2017 – Jun 2019
SKILLS	<ul style="list-style-type: none"> ■ 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	<p>Semi-supervised multi-modal learning</p> <ul style="list-style-type: none"> ■ Working on a semi-supervised GAN for detecting calcium transient events using temporal and visual information from videos. <p>Conditional Generative Adversarial Networks</p> <ul style="list-style-type: none"> ■ Implemented an attention-based generative adversarial networks for synthesizing Fluroscien Angiography from Retinal Fundus Photography. <p>Automated Denoising and Segmentation using Deep Learning</p> <ul style="list-style-type: none"> ■ Created a pipeline for Ca²⁺ spatio-temporal map generation, denoising and segmentation using deep learning. <p>Traffic Sign Recognition</p> <ul style="list-style-type: none"> ■ 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. <p>Dilated Fully Convolutional Neural Networks (D-FCN)</p> <ul style="list-style-type: none"> ■ 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	<p>Reviewer</p> <ul style="list-style-type: none"> ■ WACV-2021, BMVC-2020, ICRA-2019, Sensors, IJAIT <p>Graduate Teaching Assistant</p> <ul style="list-style-type: none"> ■ CS491/CS691 Deep Learning 	<p>2019 – Present</p> <p>Jan 2020 – May 2020</p>
AWARDS & GRANTS	<p>Outstanding Graduate Student,</p> <ul style="list-style-type: none"> ■ GSA Spring Awards 2021, University of Nevada, Reno <p>Grant, National Aeronautics and Space Administration (NASA)</p> <ul style="list-style-type: none"> ■ 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 ■ Primary Investigator: Dr. Alireza Tavakkoli <p>Outstanding Graduating Graduate Student,</p> <ul style="list-style-type: none"> ■ GSA Fall Awards 2020, University of Nevada, Reno <p>Graduate Dean's Award,</p> <ul style="list-style-type: none"> ■ Graduate School, University of Nevada, Reno <p>Best Paper Award,</p> <ul style="list-style-type: none"> ■ 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