# IMAMA ALI

Los Angeles, CA | Cell: (617) 682-2743

imamanr@gmail.com | imamanr.github.io


## EXPERIENCE:

**Applied Scientist** June 2023 - Present
Flawless AI, Santa Monica CA
Working on face tracking algorithms
- Work on 3D face tracking-refinement algorithm productization. Pose-conditional regressor, Pytorch
- Defining new metrics to improve post-production 3D facial tracking-refinement workflow. Python, Image based spatial and temporal stability metrics.
- Keep sync with latest research in the areas of Generative AI, computer vision, audio and text.

**Break** Nov 2022 - May 2023

**Senior Staff Computer Vision Engineer** August 2020 – Oct 2022
NIO Inc. San Jose CA
Worked on expanding digital cockpit features.
- Lead a team of engineers to design and launch, Sentry mode feature using 4 surround fisheye cameras based on object distance from the vehicle. Qualcomm Snapdragon SOC, Fisheye, Depth estimation, Detection, Tracking, Tensorflow, FastCV, jira, confluence.
- Stereo Calibration and rectification for fisheye and omni-directional cameras. OpenCV, C++.
- Multi-task network design and implementation for various cabin camera applications. Multi-task learning, Pytorch.
- Semantic and Instance segmentation, Object detection for edge devices. Yolact, MSCOCO, TikTok dataset, Pytorch, Selective object contrastive learning, Qualcomm Snapdragon SOC, Detectron2, quantization, AWS.
- Keep sync with latest research in the areas of representation/transfer learning, computer vision and language.

**Member of Technical Staff** Nov 2016 – July 2020
Urus Graphics (stealth-mode startup - Harvard), Burbank CA
Worked on 3D geometry reconstruction.
- Reconstruct 3D models from a single image and extend to multiple images. C++, Autoencoder/Decoder, Unsupervised learning, Differential geometry, Optimization, Eigen, Shape from shading, Neural Radiance Fields(NeRF).
- Build 3D scans library from stereo RGBD camera setup. 3D Registration, Kinect Azure, C++, Blendshape Models, Mesh deformation, Volumetric TSDF Fusion, Pose estimation.
- Keep sync with latest research in the areas of representation/transfer learning, computer vision and generative modeling.

**Research Assistant** Jan 2009 – Jan 2013
Department of Electrical and Computer Engineering, University of Memphis, Memphis TN
Worked at Center for advanced sensors with focus on compressive sensing for real time video imaging and taught /assisted Digital Image Processing and Random Signal Analysis.
- Adaptive Sampling scheme for real time Video Acquisition and reconstruction Using a Single Pixel Camera – Compressed Sensing, Motion Detection, C++, OpenCV, 64x64 DMD kit, focal lens, half- wave plate and single pixel detector
- Compressive Sensing for a Sub-millimeter Wave Single Pixel Imager – Compressed Sensing, C++, STL, Matlab, Single pixel detector, mirrors, spatial modulator.

## EDUCATION

2013 Ph.D, Image Processing, Department of Electrical and Computer Engineering,
University of Memphis; Memphis TN. GPA 3.74

2008 M.Sc. Computer Engineering, Specialization in Signal Processing
University of Engineering and Technology; Taxila GPA 3.23

2006 M.Sc. Electronics, Quaid-i-Azam University; Islamabad GPA 4.0

## TECHNICAL SKILLS:

**Platforms:** Linux, Windows, QNX and OSX

**Languages:** C/C++/C++ 11, Python2.x/3.x, Intel Assembly 8051MC

**Tools & Libraries:** STL, Eigen, OpenCV, Pytorch, Tensorflow, Keras, TFlite, QNX Momentics, Boost, Opengl, QT, SNPE, CUDA, MatlabR20xx, Octave 3.4.2, VCode, Eclipse, MSVC 201x, LaTeX, Weka, Office 20xx, git, subversion, bash.

## ACHIEVEMENTS AND INVOLVEMENT:

- 1st Class 1st, Master of Electronics 2006, Quaid-i-Azam University
- Merit Scholarship - Fall 2004 and Spring 2005, Quaid-i-Azam University
- Speaker at SPIE DSS 2011 Orlando, FL and 2012 Baltimore, MD
- Reviewer, ICML, JEI, SPIE Optical Engineering & Electronic Imaging, IEEE Signal Processing.

## PUBLICATIONs/PATENTs:

- Imama Noor and Eddie Jacobs, “Adaptive Sampling scheme for real time Video Acquisition and reconstruction Using a Single Pixel Camera” SPIE Journal Electronic Imaging
- Imama Noor and Eddie Jacobs, “Adaptive Compressive Sampling Scheme for real time Video Capture and reconstruction Using a Single Pixel Camera” SPIE Compressive Sensing Proceedings
- Imama Noor, Orges Furxhi and Eddie Jacobs, “Compressive Sensing for a Sub-millimeter Wave single Pixel Imager” SPIE Passive Millimeter-Wave Imaging Technology XIV Proceedings
- Imama Ali, US Patent Nov 2021 - Systems and methods for Vehicle surveillance Ref No. 8322-579
- Imama Ali, US Patent Jan 2022 - Cabin AI design and architecture for single camera.
- Imama Ali, US Patent Jan 2022 - Cabin AI design and architecture for multiple cameras.

## REFERENCES: Provided on Request