Girish Chandar G

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OBJECTIVE

Enthusiastic graduate student interested in research roles in the domain of Computer Vision and Deep Learning. I have academic knowledge and research experience pertaining to Deep Learning applications in Computer Vision and proficient in Python and use of deep learning frameworks like PyTorch and Tensorflow.

EDUCATION

University of Michigan, Ann Arbor, MI, USA — **Aug 2021 – Present**
M.S. Electrical and Computer Engineering — ***GPA - 4/4***

Indian Institute of Technology Gandhinagar, Gandhinagar, India — **July 2016 – Aug 2020**
B.Tech. Electrical Engineering (minor Computer Science) — ***GPA - 8.98/10***

COURSEWORK / SKILLS

- Foundations for Computer Vision (A)
- Machine Learning (A)
- Matrix Methods for Machine Learning (A+)
- 3D Computer Vision (A)
- Deep Learning for Computer Vision
- PyTorch, Tensorflow, MXNet
- MATLAB, LabVIEW
- Numpy, OpenCV, Sklearn, Pandas

POSITION

Electee | Eta Kappa Nu (Honor Society) — **Sep 2021 – Present**

Research Assistant | Architecture and Artificial Intelligence Laboratory — **Sep 2021 – Present**

Research Intern | Zentron Labs — **Oct 2020 – Aug 2021**

INTERNSHIP

Auto Shape Detection in Machine Vision | *Zentron Labs* | Python (Numpy, OpenCV) — **Oct 2020 – Aug 2021**
- Implemented Arc Detection algorithm that gives accuracies of **100%** on simulated data and 80% on real data.
- Improved Line and Circle Detection accuracies from **65% to 90%**

Optimization based Inverse Rendering | *University of Texas Dallas* | PyTorch, MXNet, Numpy — **May 2019 – July 2019**
- Implemented algorithm for 3D face reconstruction from 2D images.
- 3D Morphable Model (3DMM) used as aprori mesh for efficient inverse rendering.

Microscopic Image Analysis | *Clemson University* | LabVIEW — **May 2018 – July 2018**
- Developed LabVIEW scripts for analyzing images from Magnetic Rotational Spectroscopy (MRS) experiment.

PROJECTS

Co-Tuning for Transfer Learning on TACO Dataset | PyTorch — **Dec 2021**
- Implemented and verified the novel transfer algorithm proposed in "Co-tuning for Transfer Learning".
- **First team** to implement co-tuning on TACO (Trash Annotations in Context) dataset.

Classification of Cancer Progression by Structuring Clinical Data | Tensorflow — **Dec 2019**
- Developed a **novel model** to predict the probability of cancer by structuring Electronic Health Records using NLP techniques.
- Explored MIMIC-III dataset extensively and verified its potential to be used for cancer prediction
- Structured the clinical data using CliNER, and BioBERT embedding

Forensic Camera Model Classification using Local Binary Pattern | MATLAB — **Apr 2018**
- Implemented algorithm to identify source camera from images.
- Implemented One vs All classification model using Local Binary Patterns as features.
- **Created novel dataset** to test the model.

Unsupervised Cross-Domain Image Transfer using GAN | PyTorch — **Apr 2019**
- Implemented Encoder+GAN with modified loss.
- Verified the results for cross-domain transfer between MNIST and SVHN.

Acoustics 3-D Sound Source Localization | MATLAB — **Apr 2019**
- Participated in **IEEE Signal Processing Cup (2019)**.
- **Designed an 8-microphone array** and **created our own** dataset to test the robustness of our algorithm.

Patch based Multi-View Stereopsis | Python (Numpy, OpenCV) — **Apr 2020**
- Implemented an algorithm to get 3D scene data from multi-view stereo images.

Normalized cuts and segmentation | Python (Numpy, OpenCV) — **Apr 2019**

Face Detection using Eigenfaces | Python (Numpy, OpenCV) — **Dec 2018**