GIRISH CHANDAR G

Ann Arbor, Michigan

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OBJECTIVE

Motivated graduate student interested in pursuing Ph.D. in the domain of Computer Vision and Deep Learning focusing on Long-tailed recognition, Zero-shot learning, 3D reconstruction and generation. I have relevant 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 – Apr 2023**
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 (A)
- PyTorch, Tensorflow, MXNet
- MATLAB, LabVIEW
- Numpy, OpenCV, Sklearn, Pandas

POSITION

Graduate Student Research Assistant | Dr. Stella Yu, University of Michigan-Ann Arbor ⬀   **May 2022 – August 2022**

Research Intern | NVIDIA ⬀   **May 2022 – August 2022**

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

INTERNSHIP

Stereo Hazard Detection | *NVIDIA* | PyTorch   **May 2022 - Aug 2022**
- Implemented end-to-end deep learning model using custom UNet as backbone for feature map extraction.
- Better performance than existing algorithm in terms of achieving **zero** false positives.

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

SAR-NeRF | PyTorch   **Present**
- Research on modifying NeRF for 3D reconstruction from data obtained from radar.

Unsupervised Semantic Segmentation using Pseudo Attributes | PyTorch   **Present**
- Research focused on extracting mid-level attributes for unsupervised semantic segmentation.

Small NeRF ⬀ | PyTorch   **Apr 2022**
- Implemented a modified version of NeRF to reduce training time and computational cost.
- Experimented with multiple architectures to determine the best approximation of the original NeRF.

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 and verified the results for cross-domain transfer between MNIST and SVHN.

Patch based Multi-View Stereopsis | Python (Numpy, OpenCV)   **Apr 2020**

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

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