# SHIVANSH RAO

+1 (814) 852 9932 • shivanshrao@psu.edu • rshivansh.github.io

## EDUCATION

**Pennsylvania State University** — **University Park, PA**
*Masters of Science, Informatics* | ***CGPA : 4.0 / 4.0*** — *May 2021*
*Coursework: Deep Learning, Computer Vision, Artificial Emotion Recognition, Data Mining*

**Delhi Technological University** — **New-Delhi, India**
*Bachelor of Technology, Electronics & Communication Engineering* | ***CGPA : 8.64 / 10*** — *May 2019*
*Coursework: Computer Vision, Machine Learning, Pattern Recognition, Natural Language Processing*

## PROFESSIONAL EXPERIENCE

**Scene Flow Estimation** — **San-Diego, USA**
*Qualcomm Inc.* | ***Camera Team*** — *May - August 2020*
- Proposed an algorithm for generating basic scene flow by combining optical flow and depth from stereo for the latest snapdragon processor.
- Developed a Machine Vision Prototype to demonstrate the processor's scene flow, optical flow and depth from stereo feature capabilities to customers.

**Google AI - DeepLDB Project** — **Pennsylvania,USA**
*Penn State University* | ***Dr. Lee Giles, Dr. Daniel Kifer*** — *September 2019- Ongoing*
- Main role is to create the first large-scale landslide dataset in a semi-automated manner that can help predict the occurrence of landslide in a region.
- Proposed teacher-student learning paradigm for landslide segmentation in the presence of model/input noise in student network.

**Person Re-Identification in Videos** — **Manitoba, Canada**
*Computer Vision Lab, University of Manitoba* | ***Dr. Yang Wang*** — *June-August 2018*
- Achieved state of the art results by an average margin of +8% for the task of Person Re-Identification that helps in identifying the same person from videos captured under different cameras.
- Proposed a non-local attention model that captures the attention scores in a global manner by considering all the frames in a video and hence extracts efficient long-range dependencies.

## PUBLICATIONS

- ***Neural Machine Translation for Low-Resourced Indian Languages*****:** *Himsndhu Choudhury, Shivansh Rao, Rajesh Rohilla*; *Language Resources and Evaluation Conference,* (***LREC-2020***) *France.*
- ***Design of Hanman Entropy Network from RBFN*****:** *Madasu Hanmandlu, Shivansh Rao, Shantaram Vasikarla*; ***Journal of Modern Physics Vol.10 No.13*** (***2019***)**.**
- ***Non-Local Attentive Temporal Network for Person Re-Identification*****:** *Shivansh Rao, Peng Cao, Tanzila Rahman, Mrigank Rochan, Yang Wang; 16th IEEE International Conference on Advanced Video Signal-based Surveillance* (***AVSS-2019***), *Taiwan.*

## PROJECTS

**Augmented Reality Viewer**
*Penn State University* | ***Dr. Robert Collins*** — *Spring 2020*
- Implemented a custom augmented reality viewer (like ARKit/ARCore) by placing a virtual object in the 3D scene.
- The developed AR viewer runs from scratch including 3D point cloud recovery of a real scene and placement of virtual object on the dominant plane of the scene.

**Facial Expression Recognition from Videos [Submitted to BEEU - ECCV'20]**
*Penn State University*| ***Dr. James Wang*** — *Spring 2020*
- Achieved state-of-the-art results by an improvement of 4% for the task of video-based facial expression recognition.
- Developed a model that uses multi-level attention to process different regions of face individually and proposed a semi-supervised mechanism for its training.

## SKILLS

**Programming Languages:** C++, Python, C, MATLAB, C#.

**Tools:** PyTorch, Tensorflow, Keras, Numpy, Pandas, Scipy, Matplotlib, Jupyter, OpenCV, Scikit Learn, LaTeX, Visual Studio 2017, GIT.