

SHIVANSH RAO

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EDUCATION

Pennsylvania State University

Masters of Science, Informatics | CGPA : 4.0 / 4.0

Coursework: Deep Learning, Computer Vision, Artificial Emotion Recognition, Data Mining

University Park, PA

May 2021

Delhi Technological University

Bachelor of Technology, Electronics & Communication Engineering | CGPA : 8.64 / 10

Coursework: Computer Vision, Machine Learning, Pattern Recognition, Natural Language Processing

New-Delhi, India

May 2019

PROFESSIONAL EXPERIENCE

Google AI - DeepLDB Project

Penn State University | Dr. Lee Giles, Dr. Daniel Kifer

Pennsylvania, USA

September 2019- Ongoing

- Working in the Computer-Vision team of the DeepLDB project that aims to predict the occurrence of a landslide in a region.
- Currently, using semi-supervised training of U-NET model to segment the landslide regions in the post-landslide images. The model currently achieves an IOU of 0.68.

Person Re-Identification in Videos

Computer Vision Lab, University of Manitoba | Dr. Yang Wang

Manitoba, Canada

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.
- While working as a Research Scholar, I implemented a non-local attention model that calculates the attention scores in a global manner by considering all the frames in a video and hence extracts efficient long-range dependencies.

Task-oriented language visual grounding

Computer Vision Lab, IIT-Kanpur | Dr. Vinay Namboodiri

Kanpur, India

December 2017-March 2018

- Worked as a student research associate on a visual grounding project which helps an autonomous agent to extract semantically meaningful representations of language and map it to the visual elements and actions in the environment.
- My main contributions was to incorporate the stacked attention mechanism into the end-to-end trainable neural architecture which could efficiently combine the text and image representation and then use a policy to execute the natural language instruction.

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

- Recovered 3D point cloud of a real 3D scene and placed a virtual object on the dominant plane of the scene.
- The virtual object is also projected back to the original images to display how the virtual object overlays on the original images of a real 3D scene.

Facial Expression Recognition with Videos

Penn State University | Dr. James Wang

Spring 2020

- Achieved state-of-the-art results on single-models for the task of video-based facial expression recognition.
- Implemented an early fusion strategy by combining the face, mouth, and eyes features which are calculated by a frame-level attention mechanism.

SKILLS

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

Tools: PyTorch, Tensorflow, Keras, Numpy, Pandas, Scipy, Matplotlib, Jupyter, OpenCV, Scikit Learn, L^AT_EX, GIT.