

Rahul Mysore Venkatesh

rmvenkat@andrew.cmu.edu | (412) 315-5933 | LinkedIn: [rahul-venkatesh-64b27380](#) |
[Google Scholar](#) | [rahulvenkk.github.io](#)

OBJECTIVE

With a rich implementation and research skill set attained from my prior work and publications in the fields of 3D Computer Vision and Domain Adaptation, I have developed a focussed goal of improving data-efficiency and generalizability of Machine Learning systems.

EDUCATION

CARNEGIE MELLON UNIVERSITY

MASTER OF SCIENCE IN

COMPUTER VISION (MSCV)

Aug 2019 - Dec 2020 | Pittsburgh, PA

Cum. GPA: 4.07 / 4.33

R V COLLEGE OF ENGINEERING

BACHELOR OF ENGINEERING

IN COMPUTER SCIENCE

Aug 2014 - Aug 2018 | Bangalore, India

Cum. GPA: 9.33 / 10

COURSEWORK

Ongoing Graduate Courses

Geometry Based Methods in Vision

Multimodal Machine Learning

MSCV Capstone

Completed Graduate Courses

Introduction to Computer Vision

Introduction to Machine Learning

Math Fundamentals for Robotics

Visual Learning and Recognition

Computer Graphics

TECHNICAL SKILLS

Programming Languages

Proficient in Python, Matlab

Familiar with C, C++, CUDA

Machine Learning Frameworks

TensorFlow, PyTorch, Caffe

Graphics APIs

Blender, OpenGL

Miscellaneous

OpenCV, Scipy, Numpy, Git

Selenium, SLURM, Docker, \LaTeX

RESEARCH EXPERIENCE

CARNEGIE MELLON UNIVERSITY GRADUATE RESEARCH ASSISTANT

Jan 2020 – Present | Pittsburgh, Pennsylvania

Learning Implicit Representations for Complex Shapes

- Spearheading an [MSCV Capstone Project](#) with Verisk Analytics, advised by Prof. Laszlo Jeni (CMU) and Maneesh Singh (Verisk).
- Designed an algorithm for high fidelity 3D reconstruction for arbitrary shapes.
- Patent Application Filed. [Link to arXiv](#).

Semantic Adversarial Robustness with Differentiable Ray-Tracing

- Creating traffic-sign classification models that are robust to 3D adversarial attacks. Advised by Prof. Zico Kolter.
- DiffCVGP workshop at NeurIPS'20. [Link to paper](#)

VIDEO ANALYTICS LAB, INDIAN INSTITUTE OF SCIENCE

RESEARCH ASSISTANT UNDER PROF. VENKATESH BABU

Jan 2018 – July 2019 | Bangalore, India

Unsupervised Learning of Disentangled 3D Human Representation

- [AAAI'20 \(Oral, Lead Author\)](#): Designed an unsupervised framework to disentangle 3D pose and appearance from unlabelled human videos.
- [ECCV'20 \(Oral\)](#): Enhanced the above algorithm to generate a fine grained mesh by incorporating an SMPL prior into the learning framework.

3D Human Pose Estimation

- [WACV'20 \(Oral\)](#): Architected the first probabilistic GAN framework for generation of diverse poses for occluded joints in a given image.
- [WACV'20 \(Oral, Lead Author\)](#): Implemented an LSTM-based architecture to generate long-term duet human pose sequences.
- [ECCV'20](#): Developed an algorithm for Multi-Person 3D Pose Estimation from RGB images using only 2D-Pose supervision.

Source-Free Domain Adaptation

- [CVPR'20 \(Oral\)](#): Built the first algorithm for "source data-free" model upgrades for domain adaptation.
- [CVPR'20](#): Proposed an improvement of the above model for adaptation under unknown category gap using novel out-of-distribution image synthesis.
- [ECCV'20 \(Lead Author\)](#): Developed a Class-Incremental Learning algorithm in the source-free adaptation setting.

Neuro-Inspired Object Viewpoint Estimation

- [ACMMM'18 \(Lead Author\)](#): Designed an Iterative Pose Alignment Pipeline.
- [ECCVW'18 \(Lead Author\)](#): Proposed a non-iterative variant with fast inference.

Semantic Segmentation Challenge at ECCV'18

POSTER PRESENTATION | BEST TEAM AWARD

- [AutoNUE Workshop](#): Implemented a pipeline for Indian road scene segmentation. Won best team from India and secured travel grant.