

Mohit Jain

mohitjain6199@gmail.com | [linkedin/natsu6767](https://www.linkedin.com/in/natsu6767) | +1 858-214-4989 | [github/Natsu6767](https://github.com/Natsu6767) | mohitjain.me

EDUCATION

University of California, San Diego

La Jolla, CA, USA | Jan 2020 - Expected

MSC. COMPUTER SCIENCE

Teacher Assistant (TA): CSE-291 Unsupervised Learning (Winter 2022), ECE-285 Introduction to Visual Learning (Spring 2021)

Indian Institute of Technology, Roorkee

Roorkee, UK, India | July 2016 - June 2020

B.TECH. ELECTRICAL ENGINEERING

WORK EXPERIENCE

UNIVERSITY OF CALIFORNIA, SAN DIEGO | RESEARCH ASSISTANT

CA, USA | July 2020 - Present

- Advised by **Prof. Xiaolong Wang**.
- Conducting research on improving **simulation to real transfer and generalization in robotics**.
- We proposed an attention based multi camera visual reinforcement learning algorithm for robotics and showed that multiple cameras can solve tasks better and faster as compared to single camera or naive implementations using multiple cameras.
- Currently **leading a project** in which we aim to learn deep 3D features of the environment and use that to train an actor-critic reinforcement learning agent to solve novel robotic manipulation tasks.

UNIVERSITY OF MARYLAND, COLLEGE PARK | RESEARCH INTERN

MD, USA | June 2019 - Jan 2020

- Advised by **Prof Abhinav Shrivastava**.
- Conducted research on **understanding actions in videos** and transforming them into a target action video.
- The project was challenging since no labeled data was available for such problems. To tackle this we used **unsupervised deep learning** based methods such as Cycle-GAN.
- Our approach morphs the predicted keypoints of the current action to the target action. Using the new set of keypoints, we transform back to the visual domain to generate videos of target actions.

GTS CORPORATE | SOFTWARE ENGINEERING INTERN

Dubai, UAE | Nov 2018 - Jan 2019

- Developed a Web Portal using **Django** to be used by the Sales Team at GTS Corporate.
- The designed web portal was modeled to have a simple interface that can allow the sales team to log their daily activities, meetings, and project deals quick and succinctly.

PUBLICATIONS

LOOK CLOSER: BRIDGING EGOCENTRIC AND THIRD-PERSON VIEWS WITH TRANSFORMERS FOR ROBOTIC MANIPULATION

R. Jangir, N. Hansen, S. Ghosal, **M. Jain**, and X. Wang

- Accepted for publication in **RA-L 2022**.
- Accepted for **ICRA 2022**.
- We propose a method to fuse information from a 3rd person and an ego-centric camera attached to the robot's arm that can improve performance and **sim2real transfer for robotic manipulation** tasks.
- Our cross-attention based approach of fusing information from multiple cameras performs better and faster than naively adding multiple camera inputs and single camera approaches.

PROJECTS

INFOGAN-PYTORCH

PYTHON, PYTORCH, COMPUTER VISION, GENERATIVE MODELING

246 Stars on GitHub

Using PyTorch reproduced results from the paper, InfoGAN: Interpretable Representation Learning by Information Maximizing Generative Adversarial Nets from scratch. I trained the model on the MNIST, FashionMNIST, SVHN, and the

CelebA datasets. The model is able to learn factors of variations across the data (such as stroke thickness for MNIST handwritten digits) without any supervision.

GENERATING-DEVANAGARI-USING-DRAW

PYTHON, PYTORCH, COMPUTER VISION

89 Stars on GitHub

Employed the DRAW model based on the paper DRAW:A Recurrent Neural Network For Image Generation to create a Generative Model that can be used to create characters from the Devnagari Script. The model generates handwritten devnagari characters by gradually "drawing" across the canvas as a human does.

CONDITIONAL-ANIMEGAN

PYTHON, PYTORCH, ART, COMPUTER VISION, GENERATIVE MODELS

79 Stars on GitHub

Developed a model that can generate Anime faces conditioned on eye and hair color. The model uses deep convolutional layers and learns using the generative adversarial network training method.

DCGAN-PYTORCH

PYTHON, PYTORCH, COMPUTER VISION GENERATIVE MODELS

58 Stars on GitHub

Using PyTorch reproduced the results of the paper, Unsupervised Representation Learning with Deep Convolutional Generative Adversarial Networks on the CelebA dataset.

LOCATION-ALARM

JAVA, ANDROID

Android app that can be used to set an alarm based on GPS location. When the user comes near the location the alarm will go off signaling to the user that they have arrived. The idea behind the project was that in India public transport is often unreliable and not on time. If a passenger wanted to nap during the journey setting an alarm based on destination is better idea than estimated arrival time. This app was created as part of a **team of 3** in which I was the **project leader** for the **Microsoft Code.fun.do** 2017 Hackathon.

SKILLS

Languages: Python, C++, Java, C, SQL, HTML/CSS, \LaTeX

Machine Learning: PyTorch, Tensorflow, Numpy, Matplotlib, Scikit-Learn, Scipy