Shubh Maheshwari

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Education

IIIT - HYDERABAD

B.Tech in Computer Science

2016-2020 Hyderbad, India

- Honors
- CGPA:8.26/10
- Research Award - 2017

SECONDARY SCHOOL

- Class X - *92.17/100.0*
- Class XII - *88.46/100.0*

Links

GitHub **shubhMaheshwari**
Linkedin **shubh-maheshwari**
Twitter **maheshwarishub9**

Coursework

Introduction to AI
Statistical Methods in AI
Optimisation Methods
Computer Vision
Computer Graphics
Game Design
Distributed Systems
Database Systems
Operating Systems
Linear Algebra
Data Structures & Algorithms

Skills

Python • C/C++ • Matlab • Shell • LaTeX • HTML • JavaScript

Pytorch • Pybind11 • Eigen • Open3D • Blender • Git • OpenCV • PyCUDA

Other Projects

Motion Deblurring in Depth Images using RGB as Prior

Tunnel Rush - WebGL Game

Minecraft edition: Legend of Zelda - 3D OpenGL Game

AI bot to play 4*4*4*4 tic-tac-toe

Optimizing Color Consistency in Photo Collections

Transferring font using BicycleGAN

Skhell-A custom Linux shell program written in C.

ShareFile - Distributed file system

Miscellaneous

JEE Mains - All India Rank 503. Top 0.038% among 1.3 million students.
JEE Advanced - All India Rank 1400. Top 7% among 0.2 million students.

Experience

Researcher

TCS Innovation Labs - Deep Learning and AI

Sep 2020 – Present Ramya Hebbalaguppe & Prof. Rahul Narain

- Spearheaded the development of a frugal motion capture framework to democratize 3D content creation. It requires only a single-view video, is unsupervised, and in-dependant of the object category.
- Designed crucial components of the pipeline like motion tracking(without requiring any template or markers), rigging (skeletonization and motion compression), and shape matching.

Research Assistant

May 2019 – Present Prof. Ravi Kiran

- Developed MUGL, a deep learning model to enable large-scale(> 100 activities), diverse, and variable length generation of single and multi-person pose-based action sequences with locomotion.
- Overcame several shortcomings of MUGL by incorporating dedicated representations for finger joints and introducing a spatio-temporal transformation block with multi-head self attention.
- Examined the current and upcoming frontiers in skeleton-based action recognition by, introducing Skeletics-152 (a large-scale action recognition dataset), Skeleton-Mimetics (out-of-context actions dataset) and Metaphorics (Dumb Charades inspired dataset) and evaluation SOTA action recognition techniques

Teaching Assistant

Statistical Methods in AI & Optimisation Methods

Aug 2019 – April 2020 IIIT-H

- In both courses, partnered with the professor and fellow TAs to manage a classroom of greater than 200 students.
- Created, supervised, and graded homework assignments, exam papers, and classwork for students.

Publications

1. DSAG: A Scalable Deep Framework for Action-Conditioned Multi-Actor Full Body Motion Synthesis, *WACV-2023*
2. MUGL: Large Scale Multi Person Conditional Action Generation With Locomotion, *WACV 2022*
3. Quo Vadis, Skeleton Action Recognition? *IJCV 2021*
4. Modeling and Mitigation of Cross-Origin Request Attacks on Federated Identity Management Using Cross-Origin Request Policy, *ICISS 2017*

Projects

Google Summer of Code

Human re-identification using multi-modal perception system

May 2020 – Aug 2020 Robocomp

- Facilitation of human identification using different modalities like face recognition, gait recognition, and person re-identification.
- Integration of the pipeline into robotics framework - Robocomp.

Honor's project

August 2018 – April 2020 Prof. CV Jawahar, CVIT

- Document Tampering detection: Finding fake identity cards, receipts, and text using noise pattern of camera and patch matching to detection of the photoshopped region in document
- Development of a humanoid robot which recognizes people and gives a tour of the college. The agent can track, tell jokes, listen and chat with the user. Integrated mobile application, ROS operating system, and YOLO V3