Astitva Srivastava

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Education

International Institute of Information Technology Hyderabad — Gachibowli, Hyderabad
Master of Science (Centre for Visual Information Technology) — *Nov. 2019 – Present*

Dr. A.P.J. Abdul Kalam Technical University — Lucknow, Uttar Pradesh
Bachelor of Technology - Computer Science & Engineering — *Jul. 2015 – June 2019*

Experience

Research Assistant — Nov. 2019 – Present
CVIT, IIIT Hyderabad

- Exploring new research ideas in the field of 3D reconstruction of human body from 2D view(s). Submitted a paper in this domain to **IJCV** (under review).
- Building, training and fine-tuning deep neural networks for solving problems in Computer Vision domain, specifically 3D human body reconstruction.
- Contributed in creation of 3DHumans dataset.
- Implemented ***Peeled Ray Tracer*** for realistic rendering of human meshes under PeeledHuman representation.

Research Intern — May. 2021 – Oct 2021
Myntra

- Worked on 3D virtual try-on for the customers.
- Devised a domain adaptation method which allows the model to learn from synthetic garments and generalize to real world settings.
- Worked on dynamic resizing of the garment meshes using lattice based free-from deformation.
- Provided suggestions and guidance to the research team and published a paper titled Robust 3D Garment Digitization from Monocular 2D Images for 3D Virtual Try-On Systems in **WACV-2022**.

Computer Vision Intern — Nov. 2020 – Mar. 2021
DreamVu

- Developed a real-time 3D human performance capture system for **Sony (Japan)**.
- Worked with Azure Kinects for capturing point clouds and then using Sony's Ximea cameras performed texture mapping onto the mesh retrieved from ***TSDF*** fusion of registered point clouds.

Projects

Reconstruction of People in Loose Clothing | *PyTorch, Pymeshlab*

Worked as a co-author on Reconstruction of People in Loose Clothing - A method for reconstructing 3D clothed humans from 2D images.

3Dance | *PyK4A, cuDF*

Azure Kinect based multiview volumetric capture system in order to digitize classical Indian dance forms.

Human Mesh Segmentation | *Trimesh, PyTorch*

Devised a method to extend 2D instance-level segmentation to 3D meshes in order to label different garments and body parts of human meshes.

3DHumans | *Artec3D, Meshlab*

A rich dataset of around 250 meshes of people in various South-Asian clothing styles and diverse poses.

Peeled Ray Tracer | *Numpy, cuDF*

An extended version of recursive ray tracing for adding realistic light transporation mechanism to PeeledHuman representation.

Human Motion Synthesis | *PyTorch*

Extended seq-2-seq model in order to generate human motion from motion class label and prior frames as input.

Human Pose Estimation using Struct-SVM | *Numpy*

Exploited Structural SVM in order to predict 3D joints locations for human pose identification.

Hand Gesture Recognition | *Numpy, Adobe Photoshop*

Image processing based mathematical model for detecting hands and recognizing gestures from a dataset created from scratch.

Technical Skills

Languages: Python, Java, C/C++, SQL, JavaScript, HTML/CSS
Frameworks: OpenGL, PyTorch, Tensorflow, Spring, Hibernate
3D Geometry Processing Libraries: Open3D, Trimesh, PyRender, Pymeshlab, Libigl
Other Tools: Meshlab, Blender, Adobe Photoshop

Professional Courses

- Statistical Methods in AI | *IIIT Hyderabad*
- Digital Image Processing | *IIIT Hyderabad*
- Computer Vision | *IIIT Hyderabad*
- Deep Learning | *IIIT Hyderabad*
- Advanced Computer Graphics, AR & VR | *IIIT Hyderabad*
- Machine Learning by Andrew Ng | *Coursera*
- Deep Neural Networks with PyTorch | *Coursera*

Miscellenous Skills

- Relevant knowledge about algorithms and data structure
- Data visualization and presentation skills
- Team management skills