CHANDRADEEP POKHARIYA

M.S (Research), IIIT Hyderabad

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SUMMARY

I am a M.S. (research) student IIIT Hyderabad advised by Dr Avinash Sharma at CVIT lab and Dr Srinath Sridhar at Brown Visual Computing lab. My research experience thus far is diverse, covering a wide range of topics such as neural fields, hand-object grasp capture, textured cloth & human body reconstruction, neural surface parameterization and physics simulation. I am grateful that some of these research projects have also been converted to publications in peer-reviewed conferences and journals.

Currently, my research interests are mainly focused in geometric modelling and physics simulations.

EDUCATION

MS by Research in Computer Science and Engineering (CGPA 9.5/10.0) January 2022 - Present
International Institute of Information Technology, Hyderabad, India.
(Courses Taken: - Topics in Applied Optimization - Topics in Deep Learning - Statistical Methods in AI - Advanced Graphics & AR/VR - Computer Vision)

RESEARCH PUBLICATIONS

Manas Chaudhary, **C Pokhariya**, A P Rathore, A Chakraborty, R Narain *Towards Generalized Position-Based Dynamics, Under Evaluation*

C Pokhariya, I Shah*, A Xing*, Z Li, K Chen, A Sharma, S Sridhar *MANUS: Markerless Hand-Object Grasp Capture using Articulated 3D Gaussians, CVPR'24*

C Lu*, P Zhou*, A Xing*, **C Pokhariya**, A Dey, I Shah, R Mavidipalli, D Hu, A Comport, K Chen, S Sridhar *DiVA-360: The Dynamic Visuo-Audio Dataset for Immersive Neural Fields, CVPR'24 Highlight*

C Pokhariya*, S Naik*, A Srivastava, A Sharma *Discretization-Agnostic Deep Self-Supervised 3D Surface Parameterization*, *accepted at SIGGRAPH-Asia'22, Technical Communications*

A Srivastava, **C Pokhariya**, SS Jinka, A Sharma *xCloth: Extracting Template-free Textured 3D Clothes from a Monocular Image*, *accepted at ACM Multimedia'22*

SS Jinka, A Srivastava, **C Pokhariya**, A Sharma, PJ Narayanan *SHARP: Shape Aware Reconstruction of People in Loose Clothing.*, accepted at *IJCV (International Journal of Computer Vision)*, Novemeber 2021.

** refers to equal contribution.*

RESEARCH EXPERIENCE

Visiting Research Fellow at *Brown IVL* (Brown University) July 2023 - Nov 2023

- Visited beautiful Providence to work with Dr Srinath Sridhar on accurate contact capture from hand-object grasp videos.
- Self-supervised learning of grasping field for generative grasp synthesis of hands.

Research Assistant at *CVIT lab (IIIT Hyderabad).* May 2021 - Present

- Neural UV parameterization which attempts to generalize the parameterization over category specific classes.
- Co-Authored the ACMMM'22 work xCloth on textured garment digitzation from monocular images.
- Worked on the problem of 3D reconstruction of people in loose clothing, which resulted in the SHARP.

FUN PROJECTS

Geometry Processing

- Implementation of geometry processing algorithms from scratch.
- Implemented the "Laplacian Surface Editing algorithm" from scratch to deform the mesh based on anchor points.
- Implemented "Learning Mesh-Based Simulation with Graph Networks" as a part of course project.

HPG 2022 Student Competition

- HPG provided an implementation of a raytracer on shadertoy. The goal was to achieve the highest possible quality compared to a brute-force reference (100k samples per pixel) without a significant performance cost.
- Our implementation of raytracer was unbiased and **ranked 4th** by HPG.

ACHIEVEMENTS & ACTIVITIES

Reviewer of ACMMM'23, CVPR'24, SIGGRAPH'24, ECCV'24 conferences

I was one of the 250 selected people all over India to attend Google Research Week'23 at Bengaluru 2023

REFERENCES

Dr. Rahul Narain
Assistant Professor
IIT Delhi
(Research Collaborator)

Dr. Srinath Sridhar
Assistant Professor & P.I of the Interactive 3D Vision & Learning Lab (IVL)
Brown University
(Research Collaborator)

Dr. Avinash Sharma
Assistant Professor
International Institute of Information Technology Hyderabad
(Master thesis advisor and project guide)