Xi LUO

4TH-YEAR PHD CANDIDATE

No. 393 Middle Huaxia Road, Pudong, Shanghai, P.R. China, 201210

+86 15098125406 | luoxi@shanghaitech.edu.cn | JustLuoxi | 曦-罗-1a3838166

EDUCATION

University of Chinese Academy of Sciences & ShanghaiTech University — *Shanghai, China*

PH.D, COMPUTER SCIENCE — *Sep. 2018 - PRESENT*

- Advisor: Prof. Jingyi Yu

University of Chinese Academy of Sciences & ShanghaiTech University — *Shanghai, China*

MASTER, COMPUTER SCIENCE — *Sep. 2016 - Jun. 2018*

- Advisor: Prof. Youyi Zheng

Shandong University — *Shandong, China*

B.SC, COMMUNICATION ENGINEERING — *Sep. 2012 - Jun. 2016*

RESEARCH INTERESTS

Computer Vision · Human Performance Capture · 3D Reconstruction and Modeling

Computer Graphics · Neural Rendering · Virtual and Augmented Reality(VR/AR) · Human Computer Interaction

PROJECTS

ACADEMIC PROJECTS:

Virtual Reality and Visual Computing Center, ShanghaiTech University — ***Apr. 2016 - present***

Neural Rendering and Implicit Neural Representation — *May 2020 - present*

- Nerf-based neural representation and rendering.
- Representing a signal in a single network, such as giga-pixel images, ultral high resolution videos and human shapes.
- Neural rendering for high-quality free view rendering.

Human Performance Capture with a Dome System — *Oct. 2018 - present*

- Multi-view stereo reconstruction in a dome system with more than 80 cameras.
- Proposing a multi-view dynamic 3D human reconstruction technique based on shape deformation, specifically targets at handling challenging cases such as texture-less appearance and heavy occlusions.
- Including 3D skeleton estimation, multi-view semantic segmentation, semantic non-rigid deformation. Most related to Openpose, SMPL and DynamicFusion.

Challenging Human Hand Reconstruction — *Oct. 2019 - Mar. 2020*

- Presenting a challenging hand gesture dataset and a hybrid method for multi-view high quality human hand reconstruction which includes pose estimation and shape deformation.

3D Modeling and VR/AR

Apr. 2016 - June. 2018

- 3D modeling by human computer interaction.
- 3D objects recovering from a single photograph.
- A real-time mixed reality system, which merged real and virtual worlds into the same environment.

INDUSTRIAL PROJECTS:

DGene Digital Technology Inc. ***Jul. 2017 - Oct. 2019***

Human Shape Recovering and Compression

Jun. 2018 - Aug. 2019

- Developed a human shape reconstruction method based on template deformation.
- Included 3D skeleton estimation, non-rigid deformation and mesh compression.

Mobile Virtual Fitting

Jul. 2018 - Oct. 2018

- Presented a fully automatic method for real time mobile 3D cloth fitting with non-rigid mesh deformation.

Scalable Field of View for a Hybrid Display System in AR

Sep. 2017 - Dec. 2017

- Produced a display system to provide scalable field of view for immersive experiences in AR.
- Combined optical see-through head-mounted glasses with a projection-based installation to obtain high-resolution virtual contents for the foveal vision, and to keep awareness of the periphery simultaneously.

An AR Viewer System for Dynamic Human Sequence and Static Objects Display

Jul. 2017 - Aug. 2017

- Developed a complete real-time AR viewer system that could be used for the display of dynamic characters and static goods.
- Included environmental plane detection, friendly human-computer interaction interface, AR display module and recording module.

PUBLICATIONS

CHANDS: A Challenging Hand Gesture Dataset

In submission

Xi Luo*, Yuwei Li*, Wei Yang, Jingyi Yu

NeuralGiga: Neural Giga-Image Representation with Anti-aliasing and Continuous Viewing

In submission

Xi Luo, Yuwei Li, Minye Wu, Yuexin Ma, Lan Xu, Jingyi Yu

INV: Implicit Neural Representation for Gigapixel Videos

In submission

Xi Luo, Yuwei Li, Yuexin Ma, Lan Xu, Jingyi Yu

Multiview Deformation for Dynamic Human Reconstruction

Arxiv 2020

Xi Luo*, Yuwei Li*, Wei Yang, Jingyi Yu

Fragmentation Guided Human Shape Reconstruction

Access 2019

Yingliang Zhang*, **Xi Luo***, Wei Yang, Jingyi Yu

A Shared Augmented Virtual Environment for Realtime Mixed Reality Applications *CAVW 2018*

Yu Zhu, Shiying Li, **Xi Luo**, Kang Zhu, Qiang Fu, Xilin Chen, Huixing Gong, Jingyi Yu

AutoSweep: Recovering 3D Editable Objects from a Single Photograph *TVCG 2018*

Xin Chen, Yuwei Li, **Xi Luo**, Tianjia Shao, Youyi Zheng, Jingyi Yu, Kun Zhou

iHDViewer: A Visualization Tool for Tracking HD *BigData 2018*

Wenbo Wang*, **Xi Luo***, Liangfu Lu, Youyi Zheng

SweepCanvas: Sketch-based 3D Prototyping on an RGB-D Image *UIST 2017*

Yuwei Li*, **Xi Luo***, Youyi Zheng, Pengfei Xu, and Hongbo Fu

PATENTS

A Method for Automatic Human Motion Capture *CN110348371A 2019*

Xi Luo, Yuwei Li, Yingliang Zhang

A Method for Dynamic Human Shape Sequence Compression *CN110769261A 2019*

Xi Luo, Yu Zhu, Yuwei Li, Yingliang Zhang

A Method for Extending the Field of View of an Augmented Reality Head-mounted Display Device *CN110060349A 2019*

Xi Luo, Yanshun Zhang, Jiayan Li, Yuwei Li, Yingliang Zhang

A Method for Multi-view Based Virtual Fitting *CN109427007B 2019*

Yuwei Li, **Xi Luo**, Qiuming Sun, Yingliang Zhang, Xin Chen

A Method for Optimal Viewing Selection and Human Body Skeleton Estimation in a Multi-view System *CN110796699A 2019*

Yuwei Li, **Xi Luo**

A 3D Mesh Sequence Compression Method Based on Human Template Alignment *CN110363862A 2019*

Chen Xin, **Xi Luo**, Yuwei Li, Yingliang Zhang

Multi-view Angle Three-dimensional Human Body Reconstruction Method Based on Template Deformation *CN109242954A 2019*

Yingliang Zhang, **Xi Luo**, Wei Yang, Yu Zhu

SKILLS

Programming	Python (Pytorch, Jittor, Tensorflow), C++ (OpenCV, OpenGL, Qt, PCL, Eigen), C#, Matlab, Taichi
Softwares	Unity3D, Blender, MagicaCSG, Photoshop, Premiere
Others	Hololens, HTC vive, Leap Motion, Latex, Markdown

AWARDS & HONORS

2016-2021	ShanghaiTech University - Academic Scholarship
2016	Shandong University - Outstanding Graduate
2013-2016	Shandong University - Excellent Student & Scholarship