

# Xi LUO

4TH-YEAR PHD CANDIDATE

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## EDUCATION

### ShanghaiTech University

PH.D, COMPUTER SCIENCE

- Advisor: Prof. Jingyi Yu
- Previous Advisor: Prof. Youyi Zheng

Shanghai, China

Sep. 2016 - PRESENT

### Shandong University

B.SC, COMMUNICATION ENGINEERING

Shandong, China

Sep. 2012 - Jun. 2016

## RESEARCH INTERESTS

- Computer Vision** · Human Performance Capture · 3D Reconstruction and Modeling
- Computer Graphics** · Virtual and Augmented Reality(VR/AR) · Human Computer Interaction

## PROJECTS

### ACADEMIC PROJECTS:

*Virtual Reality and Visual Computing Center, ShanghaiTech University*

**Apr. 2016 - present**

#### Human Shape Reconstruction with Multi-view System

*Oct. 2018 - present*

CORE MEMBER AND LEADER

- Proposed a multi-view dynamic 3D human reconstruction technique based on shape deformation, specifically targets at handling challenging cases such as textureless appearance and heavy occlusions.
- Included 3D skeleton estimation, multi-view semantic segmentation, semantic non-rigid deformation.

#### Challenging Human Hand Reconstruction

*Oct. 2019 - present*

CORE MEMBER

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

#### A Shared Augmented Virtual Environment for Realtime Mixed Reality Applications

*Jan. 2018 - Feb. 2018*

CORE MEMBER

- Merged real and virtual worlds into the same environment, where physical and virtual objects exist simultaneously and interact in real time.

#### 3D Objects Recovering from a Single Photograph

*Sep. 2017 - Nov. 2017*

MAJOR MEMBER

- A fully automatic framework for extracting editable 3D objects from a single photograph. Combination with learning-based and graphics method: for the learning part, an instance semantic part segmentation for cylinder profile, cuboid profile, cylinder body, etc; for the graphics part, sweep-based object modeling with axis extraction.

#### SweepCanvas: Sketch-based 3D Prototyping on an RGB-D Image

*Sep. 2016 - Jan. 2017*

CORE MEMBER

- Presented a sketch-based interactive tool to quickly produce conceptual 3D models atop an RGB-D image.

#### 3D Objects Modeling with HTC VIVE

*Jul. 2016 - Aug. 2016*

CORE MEMBER

- Produced an immersive 3D modeling system, where users could build 3D objects by sketching in the virtual environment.

#### Marker-based Multi-sensory AR System

*Apr. 2016 - May 2016*

CORE MEMBER

- Produced an interaction system that could simulate piano performance by multiple markers and a single camera.

### INDUSTRIAL PROJECTS:

*DGene Digital Technology Inc.*

**Jul. 2017 - Oct. 2019**

## Human Shape Recovering and Compression

Jun. 2018 - Aug. 2019

CORE DEVELOPER AND LEADER

- 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

CORE DEVELOPER

- 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

CORE DEVELOPER AND LEADER

- 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

CORE DEVELOPER AND LEADER

- 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

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### Multiview Deformation for Dynamic Human Reconstruction

In submission to TVCG

Xi Luo\*, YUWEI LI\*, WEI YANG, YU ZHU, XIN CHEN, YINGLIANG ZHANG, SHI JIN, JINGYI YU

### CHANDS: A Challenging Hand Gesture Dataset

Submitted to CVPR2020

YUWEI LI\*, Xi Luo\*, WEI YANG, YU JI, CHI-HAN PENG, JINGYI YU

### Towards 3D Human Shape Recovery Under Clothing

In submission

XIN CHEN, ANQI PANG, YU ZHU, YUWEI LI, Xi Luo, GE ZHANG, PEIHAO WANG, YINGLIANG ZHANG, SHIYING LI, 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

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### A 3D Mesh Sequence Compression Method Based on Human Template Alignment

CN110363862A 2019

CHEN XIN, Xi Luo, YUWEI LI, YINGLIANG ZHANG

### A Method for Automatic Human Motion Capture

CN110348371A 2019

Xi Luo, YUWEI LI, YINGLIANG ZHANG

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

Xi Luo, YANSHUN ZHANG, JIAYAN LI, YUWEI LI, YINGLIANG ZHANG

CN110060349A 2019

## **A Multi-view Based Virtual Fitting Method**

YUWEI LI, Xi Luo, YINGLIANG ZHANG, XIN CHEN

CN109427007A 2019

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

YINGLIANG ZHANG, Xi Luo, WEI YANG, YU ZHU

CN109242954A 2019

## **SKILLS**

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**Programming** Python, C/C++, C#, Matlab

**Applications** Unity3D, Blender, Qt, Photoshop, Premiere, Latex, OpenCV, OpenGL

**Languages** Chinese, English