# Yuwei Li

**Web**: liyuwei.cc · **LinkedIn**: yuwei17 · **GitHub**: reyuwei · **Email**: li.yuwei@outlook.com

## RESEARCH INTERESTS

- **Computer Vision**: Parametric Hand modeling, Multiview Reconstruction
- **Computer Graphics**: Motion Capture, Interactive Graphics, Skeleton Animation
- **Medical Image Analysis**: MRI Analysis and Reconstruction

## EDUCATION

**ShanghaiTech University**     *Ph.D, Computer Science*                                    *2016.9-2023.6*
- **Advisor**: Prof. Jingyi Yu

**Shanghai University**     *B.Sc, Computer Science*                                    *2012.9-2016.7*
- **Advisor**: Prof. Yuchun Fang

## EXPERIENCE

**Meta Reality Labs**     *Research Scientist Intern*                                    *2022.8-2022.11*
- **Manager**: Takaaki Shiratori
- I worked as a full-time research scientist intern at Meta Reality Labs in Pittsburgh, where I work with the Codec Avatar Team to help improve full body tracking results from multiview scans.

**DGene Digital Technology Inc.**     *R&D Intern*                                    *2018.6-2019.12*
- **Manager**: Yingliang Zhang
- I worked as a part-time research and development intern at DGene in Shanghai, where I participated in a mobile virtual fitting project and worked on dynamic human reconstruction under multiview setting.

## PUBLICATIONS

**SCULPTOR: Skeleton-Consistent Face Creation Using a Learned Parametric Generator**
- Zesong Qiu*, **Yuwei Li***, Dongming He*, Qixuan Zhang, Longwen Zhang, Yinghao Zhang, Jingya Wang, Lan Xu, Xudong Wang, Yuyao Zhang, Jingyi Yu
- *ACM Transactions on Graphics (Proc. of SIGGRAPH ASIA), 2022*

**NIMBLE: A Non-rigid Hand Model with Bones and Muscles**
- **Yuwei Li**, Longwen Zhang, Zesong Qiu, Yingwenqi Jiang, Yuyao Zhang, Nianyi Li, Yuexin Ma, Lan Xu, Jingyi Yu
- *ACM Transactions on Graphics (Proc. of SIGGRAPH), 2022*

**PIANO: A Parametric Hand Bone Model from Magnetic Resonance Imaging**
- **Yuwei Li**, Minye Wu, Yuyao Zhang, Lan Xu, Jingyi Yu
- *International Joint Conference on Artificial Intelligence (IJCAI) 2021*

**IREM: A Novel Image Scanning Strategy for Achieving High-Resolution Magnetic Resonance (MR) Image via Implicit Neural Representation**
- Qing Wu, **Yuwei Li**, Lan Xu, Ruiming Feng, Hongjiang Wei, Qing Yang, Boliang Yu, Xiaozhao Liu, Jingyi Yu, Yuyao Zhang
- *International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI) 2021*

**AutoSweep: Recovering 3D Editable Objects from a Single Photograph**
- Xin Chen, **Yuwei Li**, Xi Luo, Tianjia Shao, Youyi Zheng, Jingyi Yu, Kun Zhou
- *IEEE Transactions on Visualization and Computer Graphics (TVCG) 2018*

**SweepCanvas: Sketch-based 3D prototyping on an RGB-D image**

- **Yuwei Li**, Xi Luo, Youyi Zheng, Pengfei Xu, Hongbo Fu
- *ACM User Interface Software and Technology Symposium (UIST) 2017*

## RESEARCH EXPERIENCE

- **Anatomical Human Modeling**    *2022.5-2023.1*
  - Working on parametric modeling of head, spine from CT and ultra sound images to build a full body anatomical parametric model.

- **Hand Muscle Modeling From MRI**    *2021.5-2022.5*
  - Presented NIMBLE, the first parametric model of human hands that includes bone, muscle, skin and appearance, bringing 3D hand model to a new level of realism.

- **Hand Bone Modeling From MRI**    *2020.8-2021.5*
  - Presented PIANO, the first parametric bone model of human hands from MRI data. Our PIANO model is biologically correct, simple to animate and differentiable, achieving more anatomically precise modeling of the inner hand kinematic structure.

- **Reconstructing High-Resolution MRI with Implicit Representation**    *2020.9-2021.3*
  - Proposed a novel image reconstruction network named IREM, which is trained on multiple low-resolution (LR) MR images and achieve an arbitrary up-sampling rate for HR image reconstruction with implicit representation.

- **Multiview Deformation for Dynamic Human Reconstruction**    *2018.12-2020.5*
  - Proposed a multi-view 3D human reconstruction technique with pose estimation, semantic segmentation and silhouette based mesh deformation, specifically targets at handling challenging cases such as textureless appearance and heavy occlusions.

- **Mobile virtual fitting for e-commerce**    *2018.6-2019.12*
  - Presented a fully automatic method for real time mobile 3D cloth fitting with non-rigid mesh deformation.

- **AutoSweep: Recovering 3D Editable Objects from a Single Photograph**    *2017.6-2017.12*
  - Proposed a fully automatic framework for extracting editable 3D objects with semantic parts directly from a single photograph.

- **SweepCanvas: Sketch-based 3D Prototyping on an RGB-D Image**    *2016.7-2017.4*
  - Presented a sketch-based interactive tool to quickly produce conceptual 3D models atop an RGB-D image.

## SKILLS

- Language: Chinese (Native), Englisth (Competent)
- Programming and Software: Python, PyTorch, C/C++, C#, MATLAB, LaTex, CUDA, Blender

## PATENTS

- CN202111537658.2 Super-resolution Image Reconstruction.
- CN201910634717.4 3D Sequence Compression Method based on Human Body Template Shape Alignment.
- CN201910613561.1 Automatic Extraction of 3D Human Pose.
- CN201910572619.2 A Compression Method for 3D Human Dynamic Sequence.
- CN201910524334.1 View Selection and 3D Pose Estimation Method for Multiview Camera System.
- CN201811083975.X A Virtual Fitting method based on Multiview Camera System.
- CN201811071125.8 A Multiview Reconstruction Method for low-resolution Hand Images based on Hand Parametric Models.

## AWARDS & HONORS

ShanghaiTech University - Academic Scholarship                          2016-2020
Shanghai University - Outstanding Graduate                                    2016
Shanghai University - Excellent Student                                       2014
Shanghai University - First Class Scholarship                            2012-2015