CHUANYU PAN

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EDUCATION

University of California, Berkeley Aug 2022 – May 2023
Master of Engineering, Visual Computing and Computer Graphics in Computer Science. **GPA: 4.0/4.0**

Tsinghua University Aug 2017 – Jul 2022
Bachelor of Engineering, Computer Science and Technology. **GPA: 3.8/4.0**

Course Highlight: Computer Graphics, Computer Vision, Machine Learning, VR/AR, UIUX, Mobile Dev, Distributed System

SKILLS

- **Programming Language:** Python(strong), C/C++(strong), C#, Java, JavaScript, LaTeX.
- **Framework & Tool:** Pytorch, OpenCV, CUDA, OpenGL, Vulkan, Unity3D, React, Git, Bash, Android Studio.

EXPERIENCE

Graduate Student Researcher, *FHL Vive Center for Enhanced Reality, UC Berkeley* Aug 2022 – Present
- Contributed to **OpenARK** and **Digital Twin Tracking Dataset (DTTD).** Investigated to improve iPhone's depth data.
- Lead research on real-time **few-shot** 6D object pose estimation that aim for **general AR application**.
- Publication: ***CVPR2023*** | Field: 3D Object Tracking, Computer Vision, LiDAR, Camera Calibration | Key tools: Pytorch

Research Engineer Intern, *Jittor Group, Tsinghua* Dec 2021 - Jul 2022
- Lead research on **3D cartoon face reconstruction** with **semi-supervised learning** and **mesh deformation**.
- Transformed the research to an **automatic avatar creation** API for VR online meetings with **Pytorch** and **WebGL**.
- Field: 3D Reconstruction, Facial Animation, VR, Digital Human | Key tools: Pytorch, WebGL

Research Intern, *Geometric Computing Group, Stanford* Mar 2021 - Oct 2021
- Implemented a novel framework for **robots** to continuously learn **objects' segmentation** in real scenes.
- Proposed a novel **object-centric representation** using network weights and reached **SOTA** performance.
- Publication: ***ICLR2022*** | Field: Representation Learning, Computer Vision | Key tools: Pytorch, OpenCV, iThor

Software Engineer Intern, *Beijing Huiye Technology Company* Jun 2020 - Sep 2020
- Implemented a system to drive **3D real-time facial animation** by audio input with **Pytorch** and **Unity3d**.
- Applied algorithms to a 3D avatar 'Xiaoyu', **live-streamed** on Bilibili (Youtube in China), and **attracted 312k viewers**.
- Field: Facial Animation, Multi-modal | Key tools: Pytorch, Unity3d

Research Engineer Intern, *3D Vision and Computational Photography Lab, Tsinghua* Aug 2018 - Nov 2019
- Implemented a robust system to **reconstruct 3D human body** with fancy clothes **in 3-8 seconds** using **Azure Kinect.**
- Achieved **SOTA performance** on capturing **accurate and detailed** human shape with **complex cloth structure**.
- Publication: ***CVPR2020*** **(oral)** | Field: 3D Reconstruction, Digital Human | Key tools: C++, CUDA

HIGHLIGHTED PROJECTS

Crime Reality, *MIT Reality Hackathon 2023* Jan 2023 (In three days)
- Built an **VR** application on **Quest2/HTC Vive** that help crime investigation, winning the **Future Constructor** prize.
- Field: VR development, Web Development, VR design | Key tools: Unity3d, Oculus, HTC Vive, Reactjs.

Keyword to Video, *advised by Prof. Jie Tang* Mar 2021 – Jul 2021
- Built a web application that takes keywords and **generates descriptive videos** with narrator, caption, and BGM.
- Win the **first prize** in the 'Artificial Intelligent Innovative National Competition.'
- Field: Multi-model, Video Manipulation, Web Development | Key tools: Python, GPT, Moviepy, Web Crawling, Vue.

Realistic Rendering Engine, *advised by Prof. Shimin Hu* Apr 2019 – Jun 2019
- Built a simple renderer for mesh and parametric surface with **photon mapping** and **path tracing** algorithm.
- Field: Computer Graphics, Rendering | Key tools: C++, Eigen, Qt

HIGHLIGHTED PUBLICATIONS

[1] **Chuanyu Pan**, Guowei Yang, Taijiang Mu, Yukun Lai, Shimin Hu. "Generating Animatable 3D Cartoon Faces from Single Portraits" in the Computer Graphics International (***CGI***), 2023 (in submission)

[2] **Chuanyu Pan**, Yanchao Yang, Kaichun Mo, Yueqi Duan, and Leonidas J. Guibas. "Object Pursuit: Building a Space of Objects via Discriminative Weight Generation" in ***ICLR***, 2022

[3] Zhe Li, Tao Yu, **Chuanyu Pan**, Zerong Zheng, and Yebin Liu. "Robust 3D Self-portraits in Seconds" in *IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)*, 2020 (Oral Presentation)