Kaisiyuan Wang

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Education

Doctor of Philosophy — *The University of Sydney*
Doctor's degree program — *Oct 2019 – Present*
Thesis: Deep Learning-based Methods for Sequential Point Cloud Upsampling

Master of Science — *Harbin Institute of Technology*
Master's degree program — *Sep 2016 – July 2018*
Thesis: Harmonic Analysis of High-Frequency Electrical Power Signals

Bachelor — *Harbin Institute of Technology*
Bachelor's degree program — *Sep 2012 – July 2016*
Major: Electrical Machinery

Research Projects

Sequential Point Cloud Upsampling — *Oct 2019 – Present*
Ph.D. Project — *Sydney, Australia*

- Developed sequential point cloud upsampling frameworks to achieve stable and efficient restoration for dynamic point cloud sequences captured by scanning devices. —1 ***IEEE TCSVT***, 1 ***IEEE TIP***

Portrait Video Synthesis — *Feb 2022 – Present*
Internship of Baidu Inc. — *Beijing, China*

- Developed efficient and high-fidelity **portrait modeling** paradigms used for monocular RGB video and accurate lip-driving techniques for realistic animation. —1 ***AAAI***, 1 ***CVPR***, and 2 ***Siggraph/Siggraph Asia***

Emotional Talking Head Generation — *March 2019 – June 2020*
Internship of Sensetime Research — *Beijing, China*

- Built a large-scale **emotional** audio-visual dataset and developed advanced algorithms for synthesizing rich facial expressions on a talking head. —1 ***ECCV***, 1 ***CVPR*** and 1 ***Siggraph***

Selected Publications

3D Restoration and Generation

- Sequential Point Cloud Upsampling via Progressive Multi-Level Refinement, to be submitted to ***AAAI 2024***
  Kaisiyuan Wang, Jinyang Guo, Luping Zhou
- Make Your Brief Stroke Real and Stereoscopic: 3D-Aware Simplified Sketch to Portrait Generation, ***ICMI 2023***
  Yasheng Sun, Qianyi Wu, Hang Zhou,**Kaisiyuan Wang**, Tianshu Hu, *etc*
- ObjectSDF++: Improved Object-Compositional Neural Implicit Surfaces, ***ICCV2023***
  Qianyi Wu, **Kaisiyuan Wang**, Kejie Li, Jianmin Zheng, Jianfei Cai
- VPU: Video-based Point Cloud Upsampling Framework, ***TIP2022***
  Kaisiyuan Wang, Lv Sheng, Shuhang Gu, Dong Xu
- Sequential Point Cloud Upsampling by exploiting multi-scale Temporal Dependency, ***TCSVT2021***
  Kaisiyuan Wang, Lv Sheng, Shuhang Gu, Dong Xu

2D/3D Portrait Synthesis

- Real-time Neural Radiance Talking Portrait Synthesis via Audio-spatial Decomposition, ***Arxiv***
  Jiaxiang Tang, **Kaisiyuan Wang**, Hang Zhou, Xiaokang Chen, *etc*
- Efficient Video Portrait Reenactment via Grid-based Codebook, ***Siggraph2023***
  Kaisiyuan Wang, Hang Zhou, Qianyi Wu, Jiaxiang Tang, *etc*
- StyleSync: High-Fidelity Generalized and Personalized Lip Sync in Style-based Generator, ***CVPR2023***
  Jiazhi Guan, Zhanwang Zhang, Hang Zhou, Tianshu Hu, **Kaisiyuan Wang**, *etc*
- Robust Video Portrait Reenactment via Personalized Representation Quantization, ***AAAI2023***
  Kaisiyuan Wang, Changcheng Liang, Hang Zhou, Qianyi Wu, *etc*
- Masked Lip-Sync Prediction by Audio-Visual Contextual Exploitation in Transformers, ***Siggraph Asia 2022***
  Yasheng Sun*, Hang Zhou*, **Kaisiyuan Wang**, Qianyi Wu, *etc*

- EAMM: One-Shot Emotional Talking Face via Audio-Based Emotion-Aware Motion Model, ***Siggraph 2022***
  Xinya Ji, Hang Zhou, **Kaisiyuan Wang**, Qianyi Wu, Feng Xu, Xun Cao
- Audio-Driven Emotional Video Portraits, ***CVPR 2021***
  Xinya Ji, Hang Zhou, **Kaisiyuan Wang**, Wayne Wu, Feng Xu, Xun Cao
- MEAD: A Large-scale Audio-visual Dataset for Emotional Talking-face Generation, ***ECCV 2020***
  Kaisiyuan Wang*, Qianyi Wu*, Linsen Song*, Zhuoqian Yang, Wayne Wu, Chen Qian, Yu Qiao, Chen Chang Loy

Professional activities

Conference Reviewer	ICCASP, ECCV, CVPR, and Siggraph
Journal Reviewer	IEEE TMM, TCSVT, TIP, and IJCV

Technical skills

Languages	Chinese, English (IETLS 7)
Programming Languages	Python
Deep Learning Tools	Pytorch, Tensorflow