Qianyi Wu

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Education

Monash University *Melbourne, Australia*

Ph.D candidate in Faculty of Information Technology, Data Science and AI. Supervisor: Prof. Jianfei Cai *Jul 2021 - Current*

- **Research interest**: Object-centric scene representation, focus on object-compositional scene modeling.

University of Science and Technology of China *Hefei, China*

Master of science degree. Supervisor: Prof. Juyong Zhang *Sept 2016 - Jun 2019*

- **Research Topic**: 3D face modeling and representation. Thesis title: 3D Face Representations and Its Applications.

University of Science and Technology of China *Hefei, China*

Bachelor of science degree *Sept 2012 - Jun 2016*

- **Special Class of Gifted Youth**, major in Computational Mathematics.

Work Experience

SenseTime Inc. *Beijing, China*

Research Scientist *Jul 2019 - Jul 2021*

- Working on *speech to digital human animation*. The product has been deployed in many real scenarios like banking and tourism.

Nanyang Technological University *Singapore, Singapore*

Research Intern Student *Aug 2017 - Aug 2018*

- Working on 3D caricature reconstruction from a single 2D image. Publish a paper in CVPR'18 as a spotlight presentation.

Publication List

Neural Implicit Representation

- **ECCV 2022** ObjectSDF: Object-Compositional Neural Implicit Surfaces. *Qianyi Wu*, Xian Liu, Yuedong Chen, Kejie Li, Chuanxia Zheng, Jianfei Cai, Jianmin Zheng.
- **ECCV 2022** Sem2NeRF: Converting Single-View Semantic Masks to Neural Radiance Fields. Yuedong Chen, *Qianyi Wu*, Chuanxia Zheng, Tat-Jen Cham, Jianfei Cai.
- **ICMI 2023** Make Your Brief Stroke Real and Stereoscopic: 3D-Aware Simplified Sketch to Portrait Generation (oral). Yasheng Sun*, *Qianyi Wu**, Hang Zhou*, Kaisiyuan Wang, Tianshu Hu, Chen-Chieh Liao, *etc*. (* indicates equal contribution)
- **Arxiv** Explicit Correspondence Matching for Generalizable Neural Radiance Fields. Yuedong Chen, Haofei Xu, *Qianyi Wu*, Chuanxia Zheng, Tat-Jen Cham, Jianfei Cai.
- **ICCV 2023** ObjectSDF++: Improved Object-Compositional Neural Implicit Surfaces. *Qianyi Wu*, Kaisiyuan Wang, Kejie Li, Jianmin Zheng, Jianfei Cai.

Audio-Driven Virtual Human Facial& Gesture Animation

- **ECCV 2020** MEAD: A Large-scale Audio-visual Dataset for Emotional Talking Face Generation. Kaisiyuan Wang*, *Qianyi Wu**, Linsen Song*, Zhuoqian Yang, Wayne Wu, Chen Qian, Ran He, Yu Qiao, Chen Change Loy. (* indicates equal contribution)
- **CVPR 2022** Learning Hierarchical Cross-Modal Association for Co-Speech Gesture Generation. Xian Liu, *Qianyi Wu*, Hang Zhou, Yinghao Xu, Rui Qian, Xinyi Lin, Xiaowei Zhou, Wayne Wu, Bo Dai, Bolei Zhou
- **ECCV 2022** Semantic-aware implicit neural audio-driven video portrait generation. (oral) Xian Liu, Yinghao Xu, *Qianyi Wu*, Hang Zhou, Wayne Wu, Bolei Zhou
- **SIGGRAPH 2022** EAMM: One-Shot Emotional Talking Face via Audio-Based Emotion-Aware Motion Model. Xinya Ji, Hang Zhou, Kaisiyuan Wang, *Qianyi Wu*, Wayne Wu, Feng Xu, Xu Cao
- **NeurIPS 2022** Audio-Driven Co-Speech Gesture Image Generation. (spotlight) Xian Liu, *Qianyi Wu*, Hang Zhou, Yuanqi Du, Wayne Wu, Dahua Lin, Ziwei Liu
- **SIGGRAPH Asia 2022** Masked Lip-Sync Prediction by Audio-Visual Contextual Exploitation in Transformers. Yasheng Sun*, Hang Zhou*, Kaisiyuan Wang, *Qianyi Wu*, Zhibin Hong, Jingtuo Liu, Errui Ding, Jingdong Wang, Ziwei Liu, Hideki Koike. (* indicates equal contribution)

Face Representation and Generation

- **CVPR 2018** Alive caricature from 2d to 3d. (spotlight) *Qianyi Wu*, Juyong Zhang, Yu-Kun Lai, Jianmin Zheng, Jianfei Cai
- **CVPR 2019** Disentangled representation learning for 3d face shape. Zi-Hang Jiang, *Qianyi Wu*, Keyu Chen, Juyong Zhang
- **NeurIPS 2020** AOT: Appearance Optimal Transport Based Identity Swapping for Forgery Detection. Hao Zhu*, Chaoyou Fu*, *Qianyi Wu*, Wayne Wu, Chen Qian, Ran He. (* indicates equal contribution)
- **CVPR 2022** TransEditor: Transformer-Based Dual-Space GAN for Highly Controllable Facial Editing. Yanbo Xu*, Yueqin Yin*, Liming Jiang, *Qianyi Wu*, Chengyao Zheng, Chen Change Loy, Bo Dai, Wayne Wu. (* indicates equal contribution)
- **AAAI 2023** Robust Video Portrait Reenactment via Personalized Representation Quantization. Kaisiyuan Wang, Changcheng Liang, Hang Zhou, Jiaxiang Tang, *Qianyi Wu*, Dongliang He, Zhibin Hong, Jingtuo Liu, Errui Ding, Ziwei Liu, Jingdong Wang.
- **SIGGRAPH 2023** Efficient Video Portrait Reenactment via Grid-based Codebook. Kaisiyuan Wang, Hang Zhou, *Qianyi Wu*, Jiaxiang Tang, Zhiliang Xu, Borong Liang, Tianshu Hu, Errui Ding, Jingtuo Liu, Ziwei Liu, Jingdong Wang.

Skills

Programming Python, C/C++, Matlab, LATEX, ...
Language Mandarin Chinese, English

Academic Talks

Alive Caricature from 2D to 3D

- Spotlight presentation at CVPR 2018. 2018
- Graphics And Mixed Environment Seminar Webinar (in Chinese) 2018

When Semantic mask meets Neural Radiance Field

- Invited Talk at Zhidongxi. Introduce our works on making NeRF editable via semantic mask (in Chinese). 2022
- Invited Talk at Media Intelligence of ByteDance Ads core 2022

Convert Speech to Digital Human Animation

- Invited Talk at Huawei Cloud. Present our works about audio-driven co-speech gesture generation. 2022

Selected Awards

2018 **National Scholarship**, awarded to top 2% graduates among China Mainland *China*
2016-2018 **First Class Scholarship**, University of Science and Technology of China *China*
2018 **CVPR Travel Award**, to attend CVPR 2018 *USA*
2021 **Outstanding Individual Award**, in Mobile Intelligent Group, SenseTime. *China*
2021 **Outstanding Team Award (Digital Human Team)**, in SenseTime Research. *China*
2021-2024 **Faculty of Information Technology Research Scholarship**, Monash University *Australia*

Academic Services

Academic Reviewer **Journal:** TPAMI, IJCV, TMM, Computer Graphics
Academic Reviewer **Conference:** CVPR, ICCV, ECCV, NeurIPS, ICLR, ICML, ACMMM, ISMAR