Weihao Xia

Research Assistant,
Tsinghua University

Email:	weihaox@outlook.com
Github:	github.com/weihaox
Homepage:	xiaweihao.com

Research Interest and Prospect

I am interested in computer vision, computer graphic, and human–computer interaction. I am currently working on controllable, interpretable, and generalizable visual contents generation for AR and VR applications, especially generating 2D images, videos, or 3D shapes from multi-modal information (*e.g.*, sketches, labels, or textual descriptions) in real-world scenarios with all sorts of complexities. I am also concerned about the Data Bias and Efficiency and AI Robustness, Fairness, Privacy, and transparency in generation tasks.
The ultimate goal of my research is to manifest the physical world through imagination.

Education

M.Eng. in Control Engineering   **Sept., 2016 - Jul., 2019**
School of Information Science and Technology, **Tsinghua University**

B.Eng. in Automation   **Sept., 2012 - Jul., 2016**
School of Information Science and Technology, **Sun Yat-Sen University**

Academic Experience

Research Assistant, Intelligent Computing Lab., Tsinghua University   **Dec., 2020 - Now**
Advisor: *Prof. Dr. Yujiu Yang*
Project: **Text-guided Image Generation and Manipulation**

Research Assistant, Intelligent Computing Lab., Tsinghua University   **Jun., 2019 - Oct., 2019**
Advisor: *Prof. Dr. Yujiu Yang*
Project: **Research on Image Translation, Restoration and Enhancement**

Teaching Assistant, Tsinghua University   **Oct. 2017 - Feb., 2018**
Course: **Selected Topics on Intelligent Information Processing**, Fall 2017

Work Experience

Full-time Algorithm Engineer, MediaLab, HUAWEI   **Oct., 2019 - Dec., 2020**
3D Team, AR&VR Engineering Dept.
Project: **Smartphone AR Occlusion**
Project: **Clothed People and Complex Scene Reconstruction**

Engineer Intern, MediaLab, HUAWEI   **Jun., 2018 - Sep., 2018**
Advisor: *Dr. Wensen Feng*
Project: **Fast and Accurate Image Segmentation**

R&D Intern, SenseTime Group Limited   **Oct. 2017 - Mar., 2018**
Advisor: *Dr. Wenxiu Sun*
Project: **Image Enhancement using Misaligned Training Data**

Publication

Conference

Weihao Xia, Yujiu Yang, Jing-Hao Xue, and Baoyuan Wu. **TediGAN: Text-Guided Diverse Face Image Generation and Manipulation.** CVPR, 2021. [Code] [Multi-Modal-CelebA-HQ Dataset] [Video]

Weihao Xia, Yujiu Yang*, Jing-Hao Xue, and Wensen Feng. **InterpGaze: Controllable Continuous Gaze Redirection.** ACM Multimedia (ACM-MM, acceptance rate 27.8%), 2020. [Code & Data] [Video]

Journal

Weihao Xia, Yujiu Yang*, and Jing-Hao Xue. **Unsupervised Multi-Domain Multimodal Image-to-Image Translation with Explicit Domain-Constrained Disentanglement.** Neural Networks (NN, JCR Q1, IF= 5.789), vol. 131, pp. 50-63, Nov., 2020.

Weihao Xia, Yujiu Yang*, Jing-Hao Xue, and Jing Xiao. **Domain Fingerprints for No-reference Image Quality Assessment.** IEEE Transactions on Circuits and Systems for Video Technology (TCSVT, JCR Q1, IF=4.046), 2020.

Weihao Xia, Yujiu Yang, and Jing-Hao Xue. **Cali-Sketch: Stroke Calibration and Completion for High-Quality Face Image Generation from Poorly-Drawn Sketches.** Neurocomputing (JCR Q2, IF = 4.438), 2021.

Submission

Weihao Xia, Yulun Zhang, Yujiu Yang*, Jing-Hao Xue, Bolei Zhou*, and Ming-Hsuan Yang*. **GAN Inversion: A Survey.** Jan., 2021.

Weihao Xia, Zhanglin Cheng, Yujiu Yang, and Jing-Hao Xue. **Cooperative Image Segmentation and Restoration in Adverse Environmental Conditions.** Aug., 2019.

Skill

Language: Chinese Mandarin (native), English (fluent)

Programming: Python (PyTorch, TensorFlow), C/C++, Matlab, with extensive practical experiences.

Academic Service

Journal Reviewer: IEEE Transactions on Image Processing (TIP), IEEE Transactions on Multimedia (TMM), Neurocomputing, and Pattern Recognition.

Conference Reviewer: S+SSPR 2020: IAPR Joint International Workshops on Statistical techniques in Pattern Recognition (SPR 2020) and Structural and Syntactic Pattern Recognition (SSPR 2020).

Last updated: March 1, 2021