Zijie Ye

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EDUCATION

Tsinghua University	Beijing, China
Ph.D. Student in Computer Science	*Sep 2020 – Present*

Tsinghua University	Beijing, China
B.Eng. in Computer Science (GPA: 3.71/4.0, Top 30%, Excellent Undergraduate)	*Sep 2016 – Jun 2020*

RESEARCH INTERESTS

Human Motion Modeling (motion synthesis & motion processing)

PUBLICATIONS

Semantics2Hands: Transferring Hand Motion Semantics between Avatars

Zijie Ye, Jia Jia, Junliang Xing

ACM International Conference on Multimedia, 2023, ***Oral***

ChoreoNet: Towards Music to Dance Synthesis with Choreographic Action Unit

Zijie Ye, Haozhe Wu, Jia Jia, Yaohua Bu, Wei Chen, Fanbo Meng, Yanfeng Wang

ACM International Conference on Multimedia, 2020, ***Oral***

Salient Co-Speech Gesture Synthesizing with Discrete Motion Representation

Zijie Ye, Jia Jia, Haozhe Wu, Shuo Huang, Shikun Sun, Junliang Xing

IEEE International Conference on Acoustics, Speech and Signal Processing, 2023

Human motion modeling with deep learning: A survey

Zijie Ye, Haozhe Wu, Jia Jia

AI Open, 2022

MSNet: A Deep Architecture Using Multi-Sentiment Semantics for Sentiment-Aware Image Style Transfer

Shikun Sun, Jia Jia, Haozhe Wu, **Zijie Ye**, Junliang Xing

IEEE International Conference on Acoustics, Speech and Signal Processing, 2023

Causal analysis of the unsatisfying experience in realtime mobile multiplayer games in the wild

Yuan Meng, Shenglin Zhang, **Zijie Ye**, Benliang Wang, Zhi Wang, Yongqian Sun, Qitong Liu, Shuai Yang, Dan Pei

IEEE International Conference on Multimedia and Expo, 2019

Dynamic TCP initial windows and congestion control schemes through reinforcement learning

Xiaohui Nie, Youjian Zhao, Zhihan Li, Guo Chen, Kaixin Sui, Jiyang Zhang, **Zijie Ye**, Dan Pei

IEEE Journal on Selected Areas in Communications, 2019

RESEARCH PROJECTS

Semantics-Preserving Motion Retargeting	Advisor: Prof. Jia Jia
Tsinghua HCSI Lab, Cooperating with Huawei Media Academy	*Aug 2022 – Present*

- Address semantics-preserving retargeting of dexterous hand motions across diverse hand models.
- Devised an anatomy-based semantic matrix (ASM) that quantifies hand motion semantics without relying on any template mesh.
- Acquired a mapping function from the source motion ASM to the target motion rotations using an anatomy-based semantics reconstruction network.
- Currently focusing on semantics-preserving whole-body motion retargeting with physical plausibility.

Gesture Synthesis	Advisor: Prof. Jia Jia
Tsinghua HCSI Lab	*Sep 2020 – Aug 2022*

- Synthesize co-speech gestures using discrete motion representations.

- Devised a multi-modal co-speech gesture synthesis model with temporal attention, which captures complex patterns of the speech context, producing more salient gesticulations in sync with the context.
- Developed a sign-language synthesis algorithm for the 2022 Beijing Winter Olympics sign language digital human anchor. See media reports: 1 & 2.

Choreography-aware Dance Synthesis   Advisor: Prof. Jia Jia

Tsinghua HCSI Lab, Cooperating with Sogou Inc.   *Jul 2019 − Sep 2020*

- Formalize the human choreography knowledge by defining choreography action unit (CAU) and introducing it into music-to-dance synthesis.
- Devised a two-stage framework ChoreoNet to implement the music-CAU-skeleton mapping.

Honors & Awards

2021	**84 Innovation Scholarship of Dept. of CST** (Ranked 2nd out of all 7 winning teams)
2020	**Excellent Undergraduate of Dept. of CST**
2018	**Academic Excellence Scholarship**
2017	**Academic Excellence Scholarship**
2016	**Tsinghua University Freshman Scholarship**
2015	**Gold Medal, China Chemistry Olympiad** (Top 40, member of the national training team)

Teaching

Teaching Assistant: Principle of Signal Processing, Tsinghua University	Fall 2022
Teaching Assistant: Principle of Signal Processing, Tsinghua University	Fall 2021

Skills/Others

Programming: C, C++, Java, Python, JavaScript, MATLAB

Technologies: Pytorch, Git, Docker, Blender, Electron

Languages: English (Professional, TOEFL 108), Chinese (Native)

Leadership Experience: Vice president of Student Technology Association at Dept. of CST (2018~2019)