Mingrui Zhang

Tsinghua University, Haidian District, Beijing, China (Addr.) +86-152-1017-1515 (Tel.)
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Education

- **Tsinghua University** *School of Software* Sep. 2020 – Jun. 2023(exp.)
  - Master student at the Institute of Computer Graphics and Computer Aided Design, School of Software
  - Research interests: computer vision, image processing, computer animations
- **Beijing University of Posts and Telecommunications** Sep. 2016 – Jun. 2020
  - B.S (Hons.) in computer science and technology, Rank: 6/321 (TOP 1.87%)
- **University of Cambridge** *Sidney Sussex College* Jul. 2018 – Aug. 2018

Honors & Awards

- **Outstanding Graduates of Beijing, Outstanding Bachelor Thesis Award** 2020
- **First Prize Scholarship (TOP 1.9%), Merit Student** 2018
- **China Mobile (CMCC) Scholarship (TOP 1.5%), Excellent Student Cadre** 2017
- **First Prize in National English Competition for College Students(NECCS)** 2017

Publications

- **Aesthetic Photo Collage with Deep Reinforcement Learning.** IEEE Transactions on Multimedia
  - **Mingrui Zhang**, Mading Li, Li Chen, Jiahao Yu[pdf]
- **PATENT: Motion Retargeting for Human Scene Interaction based on Laplacian Optimization** 2022
- **PATENT: Aesthetic Photo Collage with Deep Reinforcement Learning** 2021

Experience

- **Y-Tech, Kwai Technology Co., Ltd.** *Research Intern* 2021.10 – Present(10mo.)
  - Design motion adaptation algorithm for human scene interaction (HSI) problem based on the optimization of interaction mesh, enabling characters to adapt to the environment automatically without additional training data
  - Optimize the interactions of virtual character and scene in live video feed, improve the naturalness and expressiveness of character motion in real 3D scenes.
  - Create motion parameterization algorithm for semantics-preserving motion blending from multiple regular animation clips, design a global optimization algorithm to improve the naturalness of spatial composition results.
- **Video Technology Team, Kwai Technology Co., Ltd.** *Research Intern* 2020.02 – 2021.08(1yr. 6mo.)
  - Study video summarization methods using automatic photo collage. Implement photo layout arrangement algorithm and energy optimization algorithm based on image saliency. Achieve real time collage generation with spatial and temporal optimization on the short video datasets.
  - Design deep aesthetic network for collage feature extraction and propose a sequential decision model based on Deep Reinforcement Learning (DRL) to achieve high quality collage generation
  - Construct a million-scale image quality dataset with web data collection, improve the mean of opinion (MOS) score prediction accuracy of image quality assessment (IQA) task by up to 5% with self-supervised learning (SSL) model pretrained on the proposed dataset.

Skills

- **Programming**: Python, C/C++, MATLAB, LaTeX
- **Frameworks**: PyTorch, NumPy, OpenCV, TensorFlow
- **Platforms**: Linux, MacOS, Windows
- **Languages**: English(Fluent), Mandarin(Native speaker)