Hengfei Wang

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🎓 Education

University of Birmingham (UOB), Birmingham, UK | Sep. 2020 – Present
PhD student in Computer Science (CS), expected June 2024

Tsinghua University (THU), Beijing, China | Aug. 2013 – Jun. 2020
Master Degree in Mechanical Engineering (ME), GPA: 86/100	Sep. 2017 – Jun. 2020
Bachelor Degree in Mechanical Engineering (ME), GPA: 87.3/100	Aug. 2013 – Jun. 2017
Second Bachelor Degree in Business Administration (BA), GPA: 88.2/100	Aug. 2013 – Jun. 2017

⌨ Research Experience

DeNeRF: High-Fidelity Eye Animatable Neural Radiance Fields | Aug. 2022 – June. 2023

PhD project   Supervisor: Dr. Hyung Jin, Chang & Prof. Ales Leonardis

- Propose DeNeRF which learns a dynamic face NeRF model from multi-view images;
- Design a new fitting process for FLAME model, ensuring consistency across multiple views;
- Define a unified canonical space to construct a rotation-aware manifold with fitted facial parameters;
- Enable high-fidelity face rendering under novel eyeball poses and head poses and enhance the performance of the downstream gaze estimation task with rendered data.

GazeCaps: Gaze Estimation with Self-Attention-Routed Capsules | Sep. 2021 – June. 2022

PhD project   Supervisor: Dr. Hyung Jin, Chang & Prof. Ales Leonardis

- Propose a novel framework that utilizes capsules to solve the gaze estimation problem, demonstrating superior representation compared to CNN-based and Transformer-based methods by encapsulating various facial properties;
- Propose a new self-attention routing module which does not require iterations for optimization;
- Our method achieves SOTA performance on various benchmarks (EYEDIAP, Gaze360, MPIIIFaceGaze, RT-GENE).

👥 Professional Activity

- Website chair of Gaze Workshop at CVPR2022 and CVPR2023
- Reviewer in CVPR2021, CVPR2022, AAAI2022, ECCV2022
- Caretaker of the biggest gaze work repository on Github - Awesome Gaze Estimation

✈ Publication

- **Hengfei Wang**, Zhongqun Zhang, Yihua Cheng, Hyung Jin Chang. "High-Fidelity Eye Animatable Neural Radiance Fields for Human Face." British Machine Vision Conference (BMVC) **Oral**, 2023.
- **Hengfei Wang**, Jun O. Oh, Hyung Jin Chang, Jin Hee Na, Minwoo Tae, Zhongqun Zhang, Sang-Il Choi. "GazeCaps: Gaze Estimation With Self-Attention-Routed Capsules." Computer Vision and Pattern Recognition Workshops (CVPRW), 2023.
- **Hengfei Wang**, Zandong Han, and Qingxian Ma, "Robotic system with power line communication for in-pipe inspection of underground urban gas pipeline.", International Conference on Robotics and Automation Engineering (ICRAE), 2019.

♡ Honors and Awards

China Scholarship Council (CSC) Scholarship, Chinese Government	Sep. 2020
Best Oral Presentation of ICRAE 2019	Nov. 2019
Science and Technology Innovation Scholarship of School, Tsinghua University	Dec. 2014
China National Encouragement Scholarship, Chinese Government	Jun. 2014
2nd *prize in Mechanical Innovation Competition, Department of Mechanical Engineering in THU*	Dec. 2013

⚙ Skills

- Programming Languages & Platform: Python > C++ = C > C#, Linux/Windows/MacOS
- Deep learning framework: Pytorch > Tensorflow
- Language: Academic writing and Fluent speaking in English (TOFEL 98)
- Homepage: https://hengfei-wang.github.io/