# 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), 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
*$2^{nd}$ 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/