

HENGFEI WANG

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🎓 EDUCATION

University of Birmingham (UOB), Birmingham, UK

Sep. 2020 – March 2025

PhD Degree in Computer Science (CS), specializing in Computer Vision

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

🔍 RESEARCH EXPERIENCE

RTGaze: Real-Time 3D-Aware Gaze Redirection from a Single Image

Jul. 2024 – Nov. 2024

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

- Proposed a real-time 3D-aware gaze redirection model, achieving state-of-the-art speed (**61ms**), accuracy, and quality.
- Designed a novel gaze-controllable facial representation module, combining dual encoders with gaze prompt injection;
- Introduced 3D prior distillation from portrait generation models, significantly enhancing gaze synthesis quality.

TextGaze: Gaze-Controllable Face Generation with Natural Language

Jul. 2023 – Mar. 2024

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

- Introduced Text-to-Gaze face generation and built the first large-scale gaze description dataset (90K+) with LLMs;
- Proposed a two-stage Text-to-Face generation model utilizing 3D face priors and a text attention module for gaze-aware image synthesis without explicit gaze annotations;
- Demonstrated superior performance in gaze-controllable face generation tasks on FFHQ dataset.

DeNeRF: High-Fidelity Eye Animatable Neural Radiance Fields

Aug. 2022 – Jun. 2023

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

- Proposed DeNeRF, a dynamic face NeRF learned from multi-view images with precise eyeball pose alignment;
- Designed a unified canonical space and rotation-aware manifold by integrating rigid and non-rigid eye deformation fields, facilitating effective representation learning for DeNeRF;
- Achieved high-fidelity rendering under novel eye and head poses, enhancing downstream gaze estimation.

👤 PROFESSIONAL ACTIVITY

- Website chair of Gaze Workshop at CVPR2022, CVPR2023, CVPR2024
- Reviewer in CVPR2021, CVPR2022, AAAI2022, ECCV2022, AAAI2023,
- Caretaker of the biggest gaze work repository on Github - Awesome Gaze Estimation

📄 PUBLICATION

- **Hengfei Wang**, Zhongqun Zhang, Yihua Cheng, Hyung Jin Chang. "RTGaze: Real-Time 3D-Aware Gaze Redirection from a Single Image." Under Review, 2025.
- Yihua Cheng, **Hengfei Wang**, Zhongqun Zhang, Yang Yue, Boeun Kim, Feng Lu, Hyung Jin Chang. "3D Prior Is All You Need: Cross-Task Few-shot 2D Gaze Estimation." CVPR, 2025.
- **Hengfei Wang**, Zhongqun Zhang, Yihua Cheng, Hyung Jin Chang. "TextGaze: Gaze-Controllable Face Generation with Natural Language." ACM MM, 2024.
- Zhongqun Zhang, **Hengfei Wang**, Yihua Cheng, Hyung Jin Chang. "NL2Contact: Natural Language Guided 3D Hand-Object Contact Modeling with Diffusion Model." ECCV **Oral**, 2024.
- **Hengfei Wang**, Zhongqun Zhang, Yihua Cheng, Hyung Jin Chang. "High-Fidelity Eye Animatable Neural Radiance Fields for Human Face." 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." CVPRW, 2023.

💖 HONORS AND AWARDS

China Scholarship Council (CSC) Scholarship, Chinese Government

Sep. 2020 - Sep. 2024

Science and Technology Innovation Scholarship of School, Tsinghua University

Dec. 2014

China National Encouragement Scholarship, Chinese Government

Jun. 2014

⚙️ SKILLS

- Coding: Python > C++ = C > C#, Pytorch > Tensorflow
- Homepage: <https://hengfei-wang.github.io/>