Yanhui Guo

HomePage | gyhui.liam@gmail.com | +1-289-309-8828 | Linkedin

EDUCATION BACKGROUND

McMaster University — **Hamilton, ON, Canada**
Ph.D. Candidate, Electrical and Computer Engineering — *Jan.2020 - Jan.2024*
Research Interests: Image/Video Restoration & 2D/3D Computer Vision & Generative AI

Huazhong University of Science and Technology — **Wuhan, China**
M.A.Sc., Artificial Intelligence and Automation

PROFESSIONAL EXPERIENCE

McMaster University — **Hamilton, Canada**
Research Assistant in Electrical and Computer Engineering — *Jan. 2020- Jan.2024*

Amazon, US — **Seattle, United States**
(***Internship***) ***Applied Scientist*** — *June. 2023- Sep. 2023*

- Research on large language model and prompt tuning.
- One paper on continual prompt tuning (Submitted to ICLR 2024).
- Developing attribute extraction models for product recommendation.

Noah's Ark Lab, Canada — **Markham, Canada**
(***Part-time***) ***Associate Researcher*** — *Feb. 2022- May. 2023*

- Research on 3D shape reconstruction and video understanding.
- One paper on text-to-driven 3D generation (NeurIPS 2023, Paper Link)
- Winning runner-up in the ActivityNet Challenge (CVPR2022 Workshop, Video Link)
- Developing temporal action localization models (Paper Link)

NetEase Games, AI Lab — **Hangzhou, China**
(***Full-time***) ***Machine Learning Engineer*** — *July. 2019-Jan. 2020*

- Developing a deep motion generation model for automatic 3D digital human animation.
- Working on a neural solver for optical motion capture (MoCap) data cleaning.

The Hong Kong Polytechnic University (PolyU) — **Hong Kong, China**
(***Full-time***) ***Research Assistant in ME*** — *Jan. 2019-July. 2019*

- Working on the system development of micro-drones.
- Developing dynamic obstacle avoidance algorithms for flying robots.

Tencent, Game AI Group — **Shenzhen, China**
(***Internship***) ***Machine Learning Engineer*** — *Apr. 2018-July. 2018*

- Participate in developing a multi-agent AI system of a MOBA game (Honor of Kings).

SELECTED PROJECTS

Continual Prompt Tuning for Large Language Models — **Amazon, Seattle, US**
June. 2023 - Sep. 2023

- Research on the application of prompt tuning for LLMs. We developed a queue-based continual prompt tuning method and attribute extraction models for product recommendation.

Degradation-Invariant Image Representation Learning **Hamilton, Canada**
July. 2021 - Sep. 2023

- A deep degradation-independent representation learning method for robust image restoration.

Monitor-Induced Data Collection for Image Restoration **Hamilton, Canada**
July. 2020 - Nov. 2021

- We proposed an automatic system for real-world super-resolution data collection (TIP 2022).

Solving a Parametric Image Restoration Problem with a Single Model **Hamilton, Canada**
June. 2020 - May. 2021

- We proposed a novel system called functional neural network (FuncNet) to solve a parametric image restoration problem with a single model. (NeurIPS 2021)

Soft-decoding of Very Low Bit-rate Face Videos **Hamilton, Canada**
Feb. 2020 - May. 2020

- A novel deep multi-modality neural network compressed videos restoration. (ACM MM 2020)

PUBLICATIONS

- **Yanhui Guo**, Shaoyuan Xu, Jinmiao Fu, Bryan Wang. "Q-Tuning: Continual Queue-based Prompt Tuning for Language Models", (Under Review, **ICLR 2024**)(Paper Link)
- **Yanhui Guo**, Fangzhou Luo, Xiaolin Wu. " Learning Degradation Independent Representations for Camera ISP Pipelines", (Under Review, **CVPR2024**)(Paper Link).
- **Yanhui Guo**, Xinxin Zuo, Peng Dai, Juwei Lu, Xiaolin Wu. "Decorate3D: Text-Driven High-Quality Texture Generation for Mesh Decoration in the Wild", (**NeurIPS 2023**)(Project, Paper Link).
- Fangzhou Luo, **Yanhui Guo**, and Xiaolin Wu. "AND: Adversarial Neural Degradation for Learning Blind Image Super-Resolution", (**NeurIPS 2023**)(Paper Link).
- **Yanhui Guo**, Fangzhou Luo, Shaoyuan Xu. "Self-Supervised Face Image Restoration with a One-Shot Reference", (Under Review, **ICASSP 2024**)(Paper Link).
- **Yanhui Guo**, Peng Dai, Juwei Lu and Li Cheng. "Refining Implicit Neural Action Field for Temporal Action Localization", (**CVPR Workshop 2022**)(Paper Link).
- **Yanhui Guo**, Xiao Shu and Xiaolin Wu. "Data Acquisition for Dual-reference Deep Learning of Image Super-Resolution", (**Transactions on Image Processing (TIP)**)(Paper Link).
- Fangzhou Luo, **Yanhui Guo** and Xiaolin Wu. "Functional Neural Networks for Parametric Image Restoration Problems", (**NeurIPS 2021**)(Paper Link).
- **Yanhui Guo**, Xi Zhang and Xiaolin Wu. "Deep Multi-modality Soft-decoding of Very Low Bit-rate Face Videos", 2020 ACM International Conference on Multimedia (**ACM MM 2020**)(Paper Link).

Others

- Journal/Conference Reviewer: CVPR 2022, ICML 2022, NeuIPS 2022, ECCV 2022, CVPR 2023, WACV 2024, CVPR 2024.
- Coding Skills: Python, Matlab, C++, JavaScript, PyTorch, Tensorflow, Git, Opencv, Unity3D