



# Yanhui Guo

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## EDUCATION BACKGROUND

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**McMaster University**

*Ph.D. Candidate, Electrical and Computer Engineering*

**Research Interests: Image/Video Restoration & 2D/3D Computer Vision & Generative AI**

**Hamilton, ON, Canada**

*Jan.2020 - Jan.2024*

**Huazhong University of Science and Technology**

*M.A.Sc., Artificial Intelligence and Automation*

**Wuhan, China**

## PROFESSIONAL EXPERIENCE

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**McMaster University**

*Teaching Assistant in Electrical and Computer Engineering*

**Hamilton, Canada**

*Jan. 2020- Present*

**Amazon, US**

*(Internship) Applied Scientist*

**Seattle, United States**

*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**

*(Part-time Internship) Associate Researcher*

**Markham, Canada**

*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**

*(Full-time) Machine Learning Engineer*

**Hangzhou, China**

*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)**

*(Full-time) Research Assistant in ME*

**Hong Kong, China**

*Jan. 2019-July. 2019*

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

**Tencent, Game AI Group**

*(Internship) Machine Learning Engineer*

**Shenzhen, China**

*Apr. 2018-July. 2018*

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

## SELECTED PROJECTS

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**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**

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- **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**

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- 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