

# Yanhui Guo

📍 McMaster University, – Hamilton, ON, Canada

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## EDUCATION BACKGROUND

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### McMaster University

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

Research Interests: Image/Video Restoration & Video Analysis

**Hamilton, ON, Canada**

*Jan. 2020- Dec. 2023*

Advisor: Prof. Xiaolin Wu

### Huazhong University of Science and Technology

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

**Wuhan, China**

*Sept. 2017-Jun. 2019*

### Wuhan University of Technology

*B.Eng., Electronic and Information Engineering*

**Wuhan, China**

*Sept. 2013-Jun. 2017*

## PROFESSIONAL EXPERIENCE

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### Noah's Ark Lab of Huawei, Canada

*(Part-time) Researcher in Artificial Intelligence*

**Markham, Toronto, Canada**

*Jan. 2022- Present*

- Research about video analysis including action recognition and localization.
- The proposed method won the runner-up in the ActivityNet Challenge (CVPR2022 workshop).
- (Submitted to AAAI 2023) DCIA: Detction Head for Temporal Action Localization([Paper Link](#))

### McMaster University

*Teaching Assistant in ECE*

**Hamilton, Canada**

*Jan. 2020- Present*

### 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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### Learning Critical Residual Prediction for Image Compression

**Hamilton, Canada**

*Mar. 2022- Present*

- This is ongoing research work. The objective is to increase the compression quality of current image compression methods by marginal extra bitstream cost.

### Degradation-Invariant Image Representation Learning

**Hamilton, Canada**

*July. 2021- March. 2022*

This work was submitted to AAAI 2023

- A deep noise-resistant representation learning method via the information bottleneck. ([Paper Link](#))

### Monitor-Induced Data Collection for Image Restoration

**Hamilton, Canada**

*July. 2020- Nov. 2021*

This work was accepted by TIP

- An automatic system for real-world super-resolution data collection. ([Paper Link](#))
- Extended work for deblurring dataset collection. ([Paper Link](#))

### Solving a Parametric Image Restoration Problem with a Single Model

**Hamilton, Canada**

*June. 2020- May. 2021*

This work was accepted by NeurIPS 2021

- We proposed a novel system called functional neural network (FuncNet) to solve a parametric image restoration problem with a single model. ([Paper Link](#))

### Soft-decoding of Very Low Bit-rate Face Videos

**Hamilton, Canada**

*Feb. 2020- May. 2020*

One paper was accepted by ACM MM 2020

- A novel deep multi-modality neural network for soft-decoding of compressed videos. ([Paper Link](#))

### Autonomous Landing of a Multirotor Drone on a Moving Platform

**Wuhan, Hubei**

*Jan. 2017- Jan. 2019*

This work was my Master's thesis, which focused on robotic control and vision-based navigation algorithms. ([Demo Video1](#), [Demo Video2](#))

## PUBLICATIONS

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- **Yanhui Guo**, Deepak Sridhar. "DCIA: Learning Dual Context Information Aggregation Detection Head for Temporal Action Localization", (Under Review) ([Paper Link](#)).
- **Yanhui Guo**, Fangzhou Luo and Xiaolin Wu. "On Improving the Noise-Robustness of Representations via Domain Translation", (Under Review) ([Paper Link](#)).
- Yaoxin Li, **Yanhui Guo**, "ActivityNet Challenge: Temporal Action Localization", (CVPR2022 Workshop) ([Report Link](#), Winning Second Prize).
- **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](#)).
- **Yanhui Guo**, Fangzhou Luo, and Xiaolin Wu. "Semantic-Aware Latent Space Exploration for Face Image Restoration", IEEE International Conference on Multimedia and Expo (ICME, 2022) ([Paper Link](#)).
- Fangzhou Luo, **Yanhui Guo** and Xiaolin Wu. "Functional Neural Networks for Parametric Image Restoration Problems", Thirty-fifth Annual Conference on Neural Information Processing Systems (NeurIPS, 2021) ([Paper Link](#)).
- **Yanhui Guo**, Xi Zhang and Xiaolin Wu. "Deep Multi-modality So-decoding of Very Low Bit-rate Face Videos", 2020 ACM International Conference on Multimedia (ACM MM, 2020) ([Paper Link](#)).

## Others

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- Paper Review: CVPR 2022, ICML 2022, NeuIPS 2022, ECCV 2022.
- Coding Skills: Python, Matlab, C++, JavaScript, PyTorch, Tensorflow, Caffe, Opencv, Unity3D