Yanhui Guo

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EDUCATION BACKGROUND

McMaster University **Hamilton, ON, Canada**
Ph.D. Candidate, Electrical and Computer Engineering *Jan.2020- Present*
Research Interests: Image/Video Restoration & Multimedia Processing Advisor: Prof. Xiaolin Wu

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

Wuhan University of Technology **Wuhan, China**
B.Eng., Electronic and Information Engineering

PROFESSIONAL EXPERIENCE

McMaster University **Hamilton, Canada**
Teaching Assistant in Electrical and Computer Engineering *Jan. 2020- Present*

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)

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

- Research on 3D shape reconstruction and video understanding.
- One paper on text-to-driven 3D generation (Submitted to NeurIPS 2023)
- Winning runner-up in the ActivityNet Challenge (CVPR2022 Workshop, Video Link)
- One paper on Temporal Action Localization(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

Learning Critical Residual Pixels Prediction for Image Compression **Hamilton, Canada**
Mar. 2022- Present

- 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

- 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)

PUBLICATIONS (Google Scholar Link)

- **Yanhui Guo**, Xinxin Zuo, Peng Dai, Juwei Lu, Xiaolin Wu. Decorate3D: Text-Driven High-Quality Texture Generation for Mesh Decoration in the Wild", (Under Review)(Project Homepage).
- **Yanhui Guo**, Fangzhou Luo, Xiaolin Wu. "Learning Noise-Resistant Image Representation by Aligning Clean and Noisy Domains", (Under Review)(Paper Link).
- **Yanhui Guo**, Fangzhou Luo and Xiaolin Wu. "Perception-Critical Image Compression by Deep Supplementary Sketching", (Under Review)(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",Thirty-fifth Annual Conference on Neural Information Processing Systems (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.
- Coding Skills: Python, Matlab, C++, JavaScript,PyTorch, Tensorflow, Caffe, Opencv, Unity3D