Yanhui Guo

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EDUCATION BACKGROUND

McMaster University **Hamilton, ON, Canada**
Ph.D. candidate, Electrical and Computer Engineering. *Jan. 2020- Dec. 2023*
Research Interests: Image/Video Restoration & Video Analysis Advisor: Prof. Xiaolin Wu

Huazhong University of Science and Technology **Wuhan, China**
M.A.Sc., Artificial Intelligence and Automation *Sept. 2017-Jun. 2019*

Wuhan University of Technology **Wuhan, China**
B.Eng., Electronic and Information Engineering *Sept. 2013-Jun. 2017*

PROFESSIONAL EXPERIENCE

Noah's Ark Lab of Huawei, Canada **Markham, Toronto, Canada**
(***Part-time***) ***Researcher in Artificial Intelligence*** *Jan. 2022- Present*

- Research about video analysis including action recognition and localization.
- (Submitted to AAAI 2023) DCIA: Detction Head for Temporal Action Localization(Paper Link)

McMaster University **Hamilton, Canada**
Teaching Assistant in ECE *Jan. 2020- Present*

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

- Developing a deep motion generation model for 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 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, 王者荣耀).

SELECTED PROJECTS

Deep Context-Aware Image Compression and Reconstruction **Hamilton, Canada**
Mar. 2022- Present

- This is an ongoing research work. The objective is to increase the compression efficiency of current image compression methods while increasing the image soft-decoding quality.

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. (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

- **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

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