Zhihua Wang

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PROFILE

I received a B.E. degree from the China University of Mining and Technology, Xuzhou, China, in 2014, a M.S. degree from the National University of Defense Technology, Changsha, China, in 2016, and a Ph.D. degree from the Department of Computer Science, City University of Hong Kong, Kowloon, Hong Kong, in 2022, under the supervision of Dr. Kede Ma. Now, I am working as a PostDoc with Dr. Jing Liao. My research interests include image quality assessment, computational vision, and human-computer interaction.

EDUCATION

China University of Mining and Technology 2010.09-2014.07
Electrical Engineering and Automation

- Degree: Bachelor of Engineer
- GPA: 3.87/4.0

National University of Defense Technology 2014.09-2016.12
Control Science and Engineering

- Degree: Master of Engineer
- GPA: 3.80/4.0
- Thesis: “Magnetic brain signal detection in unshielded environment” - Supervisors: Prof. Dewen Hu (NUDT, Dep. of Artificial Intelligence) and Prof. Zongtan Zhou (NUDT, Dep. of Artificial Intelligence).

City University of Hong Kong 2018.08-2022.03
Computer Science

- Degree: Ph.D.
- Thesis: “Toward Generalizable Blind Image Quality Assessment” - Supervisors: Dr. Kede Ma (CityU, Dep. of Computer Science) and Prof. Dong Sun (CityU, Dep. of Biomedical Engineering)

WORK EXPERIENCE

SF Technology and SF Express 2017.01-2018.08
Software Engineer

- DataInsight, which is a self-service analysis and visualization tool. For business and data analysts, quickly and efficiently drag and drop can carry out business intelligence analysis and exquisite digital visual production.
- Cloud Ecosystem for Logistics, which aim at developing the best "Cloud Ecosystem for Logistics", improving Chinese logistics companies’ image and competitiveness in the global market, and creating a virtuous cycle through mutual development.

Huawei Technology 2021.06-2021.11

Research Intern

- Developing generalizable blind image quality assessment for user-generated images. This work leveraged online hard example mining (OHEM) to allevate the intrinsic imbalance property of the training dataset, and boost model performance, especially the generalizability.

Shanghai AI Laboratory 2022.01-2022.06

Research Intern

- Developing low light image enhancement method based on the $\mathrm{YC}_b\mathrm{C}_r$ color space. we explore the probability of decomposing an image into the Y and ${}_b\mathrm{C}_r$ components based on $\mathrm{C}_b\mathrm{C}_r$ color space and designing a two-branch network to enhance them, respectively.

Shenzhen MSU-BIT University 2023.01-2026.01

Senior Lecturer

- Department: Electrical and Computer Engineering.
- Research interests: Perceptual image processing, computational vision, computational photography, and multimedia forensics, especially focusing on image/video quality assessment.

PUBLICATIONS

Under Review:

1 **Wang Z**, Xu K, Yang Y, Dong J, Gu S, Xu L, Fang Y, Ma K. Measuring Perceptual Color Differences of Smartphone Photography. Submitted to IEEE TPAMI. [https://arxiv.org/pdf/2205.13489.pdf] (Minor Revision)

2 **Wang Z**, Zhao S, Feng W, Jiang Q, Lin W. Deep Blind Image Quality Assessment Powered by Online Hard Example Mining. Submitted to IEEE TMM.

3 **Wang Z***, Liu X*, Xu K, Fang Y, Gong M, Ma K. Blind Image Quality Assessment by Learning and Adapting from Multiple Annotators. Submitted to CVPR.

4 **Wang Z***, Chen H*, Yang Y, Sun Q, Ma K. Learning a Deep Color Difference Metric for Photographic Images. Submitted to CVPR.

Published:

1 **Wang Z**, Ma K. Active Fine-tuning from gMAD Examples Improves Blind Image Quality Assessment. IEEE T-PAMI. [https://arxiv.org/abs/2003.03849]

2 **Wang Z**, Ma K. Wang, Z. Troubleshoot Blind Image Quality Assessment in the Wild. CVPR2021. [https://arxiv.org/abs/2105.06747]

3 **Wang Z**, Tang Z, Zhang J, Fang Y. Image Quality Evaluator in the Wild by Learning beyond Human Opinion Scores. PR. [https://arxiv.org/abs/2106.14076]

4 **Wang Z**, Li D, Ma K. Semi-supervised Ensemble Learning for Blind Image Quality Assessment. Workshop for IJCAI2021. [https://arxiv.org/abs/2106.14008]

5 Xu K*, **Wang Z***, Yang Y, Dong J, Xu L, Fang Y, Ma K. A Database of Visual Color Differences of Modern Smartphone Photography. ICIP2022. [https://ieeexplore.ieee.org/document/9897498]

6 **Wang Z**, Yang Z, Dong T. A Review of Wearable Technologies for Elderly Care That Can Accurately Track Indoor Position, Recognize Physical Activities and Monitor Vital Signs in Real-Time. Sensors, 2017. [https://www.mdpi.com/1424-8220/17/2/341]

7 **Wang Z**, Yu Y, Xu M, et al. Towards a Hybrid BCI Gaming Paradigm Based on Motor Imagery and SSVEP. International Journal of Human-Computer Interaction, 2019. [https://www.tandfonline.com/doi/full/10.1080/10447318.2018.1445068]

8 Yu Y, Zhou Z, Liu Y, Jiang J, Yin E, Zhang N,**Wang Z**, Liu Y, Wu X, Hu D, et al. Self-paced Operation of A Wheelchair Based on A Hybrid Brain-computer Interface Combining Motor Imagery and P300 Potential. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2017, 25(12): 2516-2526.

9 Chen Z, Zhang N, **Wang Z**, et al. Hand Gestures Recognition from Multi-channel Forearm EMG Signals. ICCSSP2016.

10 Tang Z, Chen Y, **Wang Z**, Hu R and Wu Q. Non-spike Timing-dependent Plasticity Learning Mechanism for Memristive Neural Networks. Applied Intelligence, 2021, 51(6): 3684-3695.

INVITED PRESENTATIONS

- 2021 Troubleshooting Blind Image Quality Models in the Wild. CVPR2021. Virtual. June 27, 2021.
- 2021 Semi-Supervised Deep Ensembles for Blind Image Quality Assessment. IJCAI 2021 Workshop Weakly Supervised Representation Learning. Online. Aug 21, 2021.

PRIZES AND AWARDS

- 2010 Outstanding Freshman Scholarship (Grade 1)
- 2011 National Scholarship for Encouragement
- 2012 Model Student of Academic Records
- 2013 National Scholarship for Encouragement
- 2016 Outstanding Students of College

ACTIVITIES AND SERVICES

Membership:

- IEEE; CCF; CSIG
- CSIG Big Visual Data Technical Committee Member
- CSIG Multimedia Technical Committee Member

Reviewer:

- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Image Processing
- IEEE Transactions on Neural Networks and Learning Systems
- IEEE Transactions on Circuits Systems for Video Technology
- IEEE Transactions on Multimeida