Desen Yuan

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EDUCATION

Master of Communications Engineering
University of Electronic Science and Technology of China 2020.9 - 2023.6
During this period, I achieved a grade of 71.25/100, received a first-class academic award (top 15%), a second-class scholarship, and was mentored by Qingbo Wu.

Bachelor of Communications Engineering
Chongqing University of Posts and Telecommunications 2016.9 - 2020.6
During this period, I achieved a grade of 79.67/100 (Top 30% in academic performance and top 2% in overall performance), received multiple Science and Innovation Scholarships, won the grand prize in the Chongqing regional competition of the 16th 'Challenge Cup' National College Students' Extracurricular Academic Science and Technology Competition, and a second prize at the national finals. I also received the Chongqing Municipal Government Patent Award and was granted direct admission without examination to pursue a master's degree (Less than 3%). My supervisors are Chenqiang Gao and Jiangping Huang.

RESEARCH EXPERIENCE

Research Assistant
University of Electronic Science and Technology of China, IVIPC Lab 2020.9 - Now
Recently, my research has focused on visual question answering under language bias, image quality assessment, and visual perception. I have collaborated with Qingbo Wu, Lei Wang, King Ngi Ngan, and others.

Algorithm Engineer
China Telecom Beijing Research Institute 2022.4 - 2022.10
My research focuses on attack and defense tasks for visual question answering. I conduct adversarial attacks in scenarios with language biases and in normal contexts to assess and analyze the robustness of models. Additionally, I have proposed a targeted feature-invariant self-distillation adversarial training method.

PUBLICATIONS

Published

1. Desen Yuan, Lei Wang. "Dual-Criterion Quality Loss for Blind Image Quality Assessment," *Proceedings of the 32th ACM International Conference on Multimedia (ACM MM)*, 2024 (Oral presentation, 3.97% only).
2. Desen Yuan, Lei Wang. "Towards Adversarial Robustness in Blind Image Quality Assessment with Soft Thresholding Norm," *IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, 2024.
3. Desen Yuan. "Balancing Easy and Hard Distortions: A Multi-Rate Knowledge Distillation Strategy for Blind Image Quality Assessment," *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2024 (Oral presentation).
4. Desen Yuan, Lei Wang, Qingbo Wu, Fanman Meng, King Ngi Ngan, and Linfeng Xu. "Language bias-driven self-knowledge distillation with generalization uncertainty for reducing language bias in visual question answering," *Applied Sciences*, 12, no. 15 (2022): 7588 (JCR Q1).
5. Desen Yuan, Xiujing Liu, Qingbo Wu, Hongliang Li, Fanman Meng, King Ngi Ngan, Linfeng Xu. "Visual Question Answering Method Based on Counterfactual Thinking," *Computer Science*, 49 (12), 229-235.
6. Jiangping Huang, Chunli Xiang, Shuwei Yuan, Desen Yuan, and Xiaorui Huang. "Character-aware convolutional recurrent networks with self-attention for emotion detection on Twitter," *2019 International Joint Conference on Neural Networks (IJCNN)*, pp. 1-8. IEEE, 2019.

Preprints

1. Desen Yuan. "Language bias in visual question answering: A survey and taxonomy," *arXiv preprint* arXiv:2111.08531 (2021).
2. Lei Wang, Qingbo Wu, Desen Yuan, King Ngi Ngan, Hongliang Li, Fanman Meng, and Linfeng Xu. "Learning with Noisy Low-Cost MOS for Image Quality Assessment via Dual-Bias Calibration," *arXiv preprint* arXiv:2311.15846 (2023).
3. Lei Wang, and Desen Yuan. "Perceptual Constancy Constrained Single Opinion Score Calibration for Image Quality Assessment," *arXiv preprint* arXiv:2404.19595 (2024).
4. Lei Wang, and Desen Yuan. "Beyond MOS: Subjective Image Quality Score Preprocessing Method Based on Perceptual Similarity," *arXiv preprint* arXiv:2404.19666 (2024).
5. Lei Wang, and Desen Yuan. "Causal Perception Inspired Representation Learning for Trustworthy Image Quality Assessment," *arXiv preprint* arXiv:2404.19567 (2024).