Haoming Cai

(+86) 130-5802-5509 | sscm9917@gmail.com
2001 Longxiang Road, Longgang District, Shenzhen, Guangdong 518172

RESEARCH INTERESTS

Image Restoration, Deep Learning, Image Quality Assessment

EDUCATION

The Chinese University of Hong Kong, Shenzhen. *Sep 2017 - May 2022*

- Bachelor of Engineering, Computer Science and Engineering,

- Relevant Coursework: Introduction to Multimedia Systems, Fundamentals of Artificial Intelligence

MANUSCRIPTS

■ PIPAL : a Large-Scale Image Quality Assessment Dataset for Perceptual Image Restoration. *Sep 2019 - Present*

- Jinjin Gu, **Haoming Cai**, Haoyu Chen, Xiaoxing Ye, Jimmy S. Ren, Chao Dong

- In progress

RESEARCH PROJECT

■ PROJECT : Perceptual Image Restoration: *Sep 2019 - Present*

- **Keywords** : IQA dataset, distortion of GAN type, ELO and Swiss rating system

- **Description** :

- We contributed a novel perceptual similarity dataset called PIPAL to study the new distortions brought by GAN technology. With employing a new rating system, PIPAL not only obtains more reliable and probability-based human rating of image quality scores after 670k human judgements, but also provides feasibly extendable characteristics. In addition to the traditional distortions' types, PIPAL contains outputs of abundant image restoration algorithm. In particular, compared to existing datasets, it's the first time an IQA dataset absorbs the outputs of GAN-based algorithm. The existing outcome shows there is still a huge inconsistency between high numerical performance and perceptual performance, especially on output of GAN type distortion.By training on PIPAL, improved IQA has great potential to guide existing SR algorithms to reconstruct more visual-friendly high-quality image.

COMPETITION EXPERIENCE

■ AI in RTC-Super Resolution Image Quality Competition *Jul 2019 - Sep 2019*

- **Organization** : DataCastle

- **Description** :

- Combined with different network components and training strategies, the final resulting trained model obtained a relatively good performance on testing dataset of competition and finally beat 72 percent competitors on perceptual index (PI).

SKILLS

- **Programming Language** : Python, C/C++, MATLAB

- **Deep Learning Package** : PyTorch

- **Interests**: Photography