Qunliang Xing · Video Coding and Computer Vision

ryanxingql.github.io · ryanxingql@gmail.com

Education

09.2019 - Present
Doctor of Philosophy

Beihang University with an Honors degree

Advisor Professor Mai Xu

Major Communication and Information Systems

09.2015 - 07.2019
Bachelor of Engineering

Beihang University with an Honors degree

Major Communication and Information Systems

Publications

IEEE/CVF CVPR 2024

Enhancing Quality of Compressed Images by Mitigating Enhancement Bias Towards Compression Domain

Q. Xing, M. Xu, S. Li, X. Deng, M. Zheng, H. Liu, Y. Chen

Identified and mitigated enhancement bias, thereby improving the quality of enhanced compressed images.

IEEE TPAMI 2023

DAQE: Enhancing the Quality of Compressed Images by Exploiting the Inherent Characteristic of Defocus

Q. Xing, M. Xu, X. Deng, Y. Guo

Proposed an intra-image divide-and-conquer enhancement strategy based on defocus, which indicates region-wise compression quality.

IEEE/CVF CVPRW 2022

Progressive Training of a Two-stage Framework for Video Restoration

Q. Xing*, M. Zheng*, M. Qiao*, M. Xu, L. Jiang, H. Liu, Y. Chen

NTIRE winning solution: Integrated a series of contributions on dataset construction, inference architecture design, and training strategy optimization.

IEEE TIP 2021

DeepQTMT: A Deep Learning Approach for Fast QTMT-based CU Partition of Intra-mode VVC

T. Li, M. Xu, R. Tang, Y. Chen, Q. Xing

Proposed a multi-level partitioning architecture that can be prematurely terminated for the CU partitioning task, effectively accelerating partition inference.

ECCV 2020

Early Exit or Not: Resource-efficient Blind Quality Enhancement for Compressed Images

Q. Xing, M. Xu, T. Li, Z. Guan

Proposed a multi-level early-exit enhancement strategy based on real-time quality assessment for the blind quality enhancement challenge.

IEEE TPAMI 2019

MFQE 2.0: A New Approach for Multi-frame Quality Enhancement on Compressed Video

Q. Xing, Z. Guan, M. Xu, R. Yang, T. Liu, Z. Wang

Enhanced low-quality frames using key frames in hierarchical encoding, effectively improving compressed video quality and mitigating quality fluctuations.

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Work Experience

12.2021 - 12.2023 | Research Intern

Alibaba Tao Technology

Acted as the main contributor in the NTIRE CVPR 2022 Video Quality Enhancement Challenge, responsible for dataset construction, inference architecture design, and training strategy optimization. The proposed solution won the competition, competing against teams from ETH, CUHK's XPixel lab, Tencent's GY-Lab, and others.

07.2021 - 09.2021 | Research Intern

Tencent Rhino-bird Open-source Training Program

Selected as one of the 127 participants out of more than 1800 candidates; replicated recent work based on the high-performance graph computing platform Angel.

12.2018 - 12.2019 | Research Intern

Huawei 2012 Lab

Served as the main contributor for multi-frame decoding quality optimization on Huawei's proprietary encoder HW.265; achieved over a 10% BD-BR gain on a real business dataset covering a large volume of UGC and live game streaming videos.

Honors and Awards

2023 | **China National Scholarship**

Highest national award available to graduate students.

2023 | **Beihang Academic Excellence Foundation for Ph.D. Candidates**

Ranked 1st/96 in the college.

2022 | **Glarun Scholarship by the 14TH Research Institute, CETC**

Among four awardees from 96 college students.

2022 | **Winner of the CVPR NTIRE challenge on Super-Resolution and Quality Enhancement of Compressed Video**

Ranked 1st among 8 teams in the final.

2019 | **Beihang Excellent Graduate**

Top 20% in the university.

2015/18/21/22 | **Beihang Outstanding/Merit Student**

Top 5% in the university.

2014 | **Shenzhen Merit Student**

Sole awardee in the school.

Community Service

02.2021 - Present | **Reviewer**

CVPR ('24), TCSVT ('22-), JAS ('22-), TIP ('21-), TMM ('21-), ICME ('21)