Haochen Zhang

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Target

A Ph.D. position in CS / EE department, specifically in Computer Vision and Machine Learning.

Education

2017.09 - 2020.06 **University of Science and Technology of China** Hefei, China
Master in Electronic Engineering, Image / video processing GPA:4.01/4.3 (3.86/4)

2013.08 - 2017.06 **University of Science and Technology of China** Hefei, China
Bachelor in Electronic Engineering GPA:3.73/4.3 (3.66/4)-Top15%

Experiences

Classification-Distortion-Perception Tradeoff 2019.03 - Now

- Analyzed the relationship among *signal fidelity*, *perceptual naturalness* and *semantic quality* in the image restoration task. Demonstrated a *tradeoff* among the three metrics *theoretically* and *experimentally* with the semantic quality defined as the classification accuracy of a pre-trained classifier. This work has been accepted by *NeurIPS2019*. Now, we are extending it to a more general situation.

Video Super-Resolution Method Tailored for Action Recognition 2017.09 - 2019.03

- Investigated the VSR problem for facilitating video analytics tasks. Tailored for two-stream action recognition networks, we developed SR methods for the spatial and temporal recognition respectively. On the one hand, we proposed *an optical-flow guided weighted MSE* to emphasize the reconstruction of moving objects. On the other hand, we proposed *a siamese network training strategy* in order to guarantee the *temporal continuity* between consecutive frames. This work has been accepted by *ICCV2019*.

Text Image Super-Resolution Method Tailored for OCR 2016.09 - 2017.06

- Developed text image SR method to help optical character recognition (OCR). Based on an assumption that OCR accuracy depended on high contrast edges, we proposed *a loss function* for SR training and conducted model combination to further improve the performance. Besides, we also developed *an image padding method* to refine the image boundaries during SR. This work has been published in *VCIP2019*.

Publications

Haochen Zhang, Dong Liu*, Zhiwei Xiong. Two-stream action recognition-oriented video super-resolution. In *ICCV*. Seoul, Korea. Oct. 27-Nov. 2, 2019.

Dong Liu*, **Haochen Zhang**, Zhiwei Xiong. On the classification-distortion-perception tradeoff. In *NeurIPS*. Vancouver, Canada. Dec. 8-14, 2019.

Haochen Zhang, Dong Liu*, Zhiwei Xiong. CNN-based text image super-resolution tailored for OCR. In *VCIP*. St. Petersburg, FL, USA. Dec. 10-13, 2017. (* denotes my advisor.)

Skills

Standardized Tests TOEFL: R30 L25 S20 W22 GRE: V161 Q169 AW3
Computer Skills C, MATLAB, Python Caffe, TensorFlow, PyTorch

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