Term Project: A Video Super-Resolution based Approach for License Plate Recognition with a Dashcam

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Abstract

Keywords:

1. Introduction

As a motorcyclist in Taiwan, illegal driving poses a great threat to the rider's body. Every time I want to report the illegal vehicles that almost caused a car accident, the license plate recognition is not easy because the picture quality of the dash cam is not clear enough.

In this project, the objective is o restore a sequence of high-resolution (HR) frames from their low-resolution (LR) counterparts based on the BasicVSR[1]. And recognition the license plate using object detection automatically .

2. Datasets

Baseline approach not decided yet

Plan to use the BasicVSR[1] to restore the high-resoulution frames, which uses the REDS[2] and Vimeo90Kxue2019video as the training data.

Plan to use YOLOv3[3] to detect the license plates , I would use some trained weight which was trained by other author.

I would use some uploaded video on the youtube as the test data , most of which would download from the https://www.wowtchout.com/. which is a platform for everyone to upload their dashcam videos.

[Explain the dataset you used.]

3. Methodology

Baseline approach not decided yet maybe only use YOLOv3 ? But i'm afraid it's too powerful.

A combination of video super-resolution and object detection [Explain the method you proposed.]

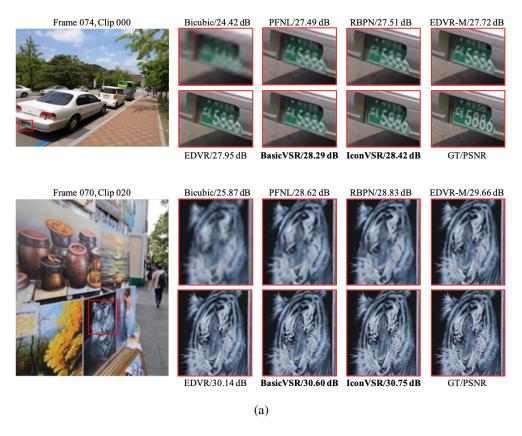## 4. Results and Discussions

(a)

Figure 1: Samples of the video super-resoulution by BasicVSR .

Table 1: The number of training, testing,from the dataset provided form https://www.kaggle.com/datasets/achrafkhazri/labeled-licence-plates-dataset for baseline approach or Yolov3 training

dataset	Training	Testing	Total
1	1,134	284	1,418

5. Conclusion

6. Acknowledgements

7. Requirements

References

[1] Kelvin CK Chan, Xintao Wang, Ke Yu, Chao Dong, and Chen Change Loy. Basicvsr: The search for essential components in video super-resolution and beyond. In Proceedings of the IEEE conference on computer vision and pattern recognition, 2021.

[2] Seungjun Nah, Sungyong Baik, Seokil Hong, Gyeongsik Moon, Sanghyun Son, Radu Timofte, and Kyoung Mu Lee. Ntire 2019 challenge on video deblurring and super-resolution: Dataset and study. In CVPR Workshops, June 2019.

[3] Joseph Redmon and Ali Farhadi. Yolov3: An incremental improvement, 2018.