RealPixVSR: Pixel-Level Visual Representation Informed Super-Resolution of Real-World Videos

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1. A.1. Additional Qualitative Evaluations

We present 12 additional qualitative evaluation results of our proposed RealPixVSR model in the remaining supplementary material, where we compare it with six state-of-the-art models: RealSR [1], BSRGAN [2], RealVSR [3], Real-ESRGAN [4], DBVSR [5], and RealBasicVSR [6]. For each result, we display the input frame on the left side, and the restoration results of each comparison model and our model on the right side in a 2x4 grid. The location of the restored block is indicated with a colored rectangle in the input frame. Based on the displayed qualitative evaluation results, we are confident that our proposed RealPixVSR model significantly outperforms the other models.

References

[1] Xiaozhong Ji, Yun Cao, Ying Tai, Chengjie Wang, Jilin Li, and Feiyue Huang. Real-world super-resolution via kernel estimation and noise injection. In *IEEE Conf. Comput. Vis. Pattern Recog.*, 2020. 1

[2] Kai Zhang, Jingyun Liang, Luc Van Gool, and Radu Timofte. Designing a practical degradation model for deep blind image super-resolution. In *IEEE Conf. Comput. Vis. Pattern Recog.*, 2021. 1

[3] Xi YANG, Wangmeng Xiang, Hui Zeng, and Lei Zhang. Real-world video super-resolution: A benchmark dataset and a decomposition based learning scheme. In *Int. Conf. Comput. Vis.*, 2021. 1

[4] Xintao Wang, Liangbin Xie, Chao Dong, and Ying Shan. Real-esrgan: Training real-world blind super-resolution with pure synthetic data. In *Int. Conf. Comput. Vis. Workshops*, 2021. 1

[5] Jinshan Pan, Haoran Bai, Jiangxin Dong, Jiawei Zhang, and Jinhui Tang. Deep blind video super-resolution. In *Int. Conf. Comput. Vis.*, 2021. 1

[6] Kelvin C.K. Chan, Shangchen Zhou, Xiangyu Xu, and Chen Change Loy. Investigating tradeoffs in real-world video super-resolution. In *IEEE Conf. Comput. Vis. Pattern Recog.*, 2022. 1

Figure 1. **Qualitative Comparison [Clip 01 - Frame 50].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

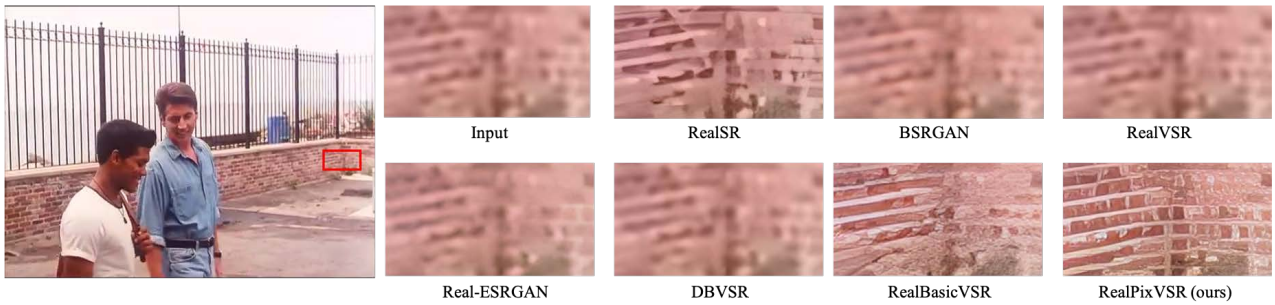

Figure 2. **Qualitative Comparison [Clip 04 - Frame 50].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

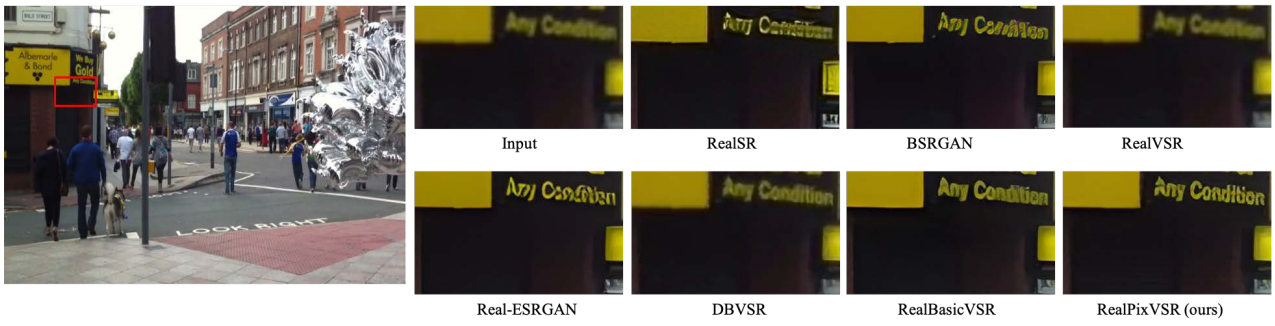

Figure 3. **Qualitative Comparison [Clip 13 - Frame 10].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

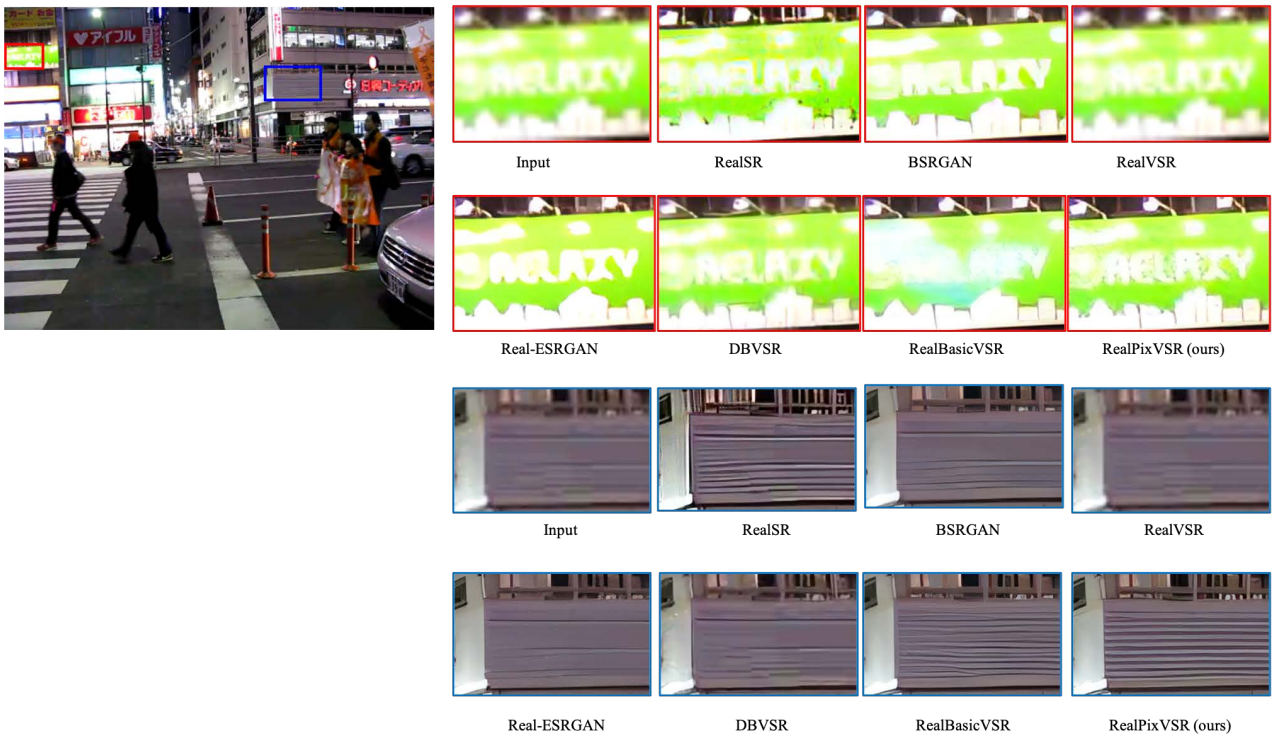

Figure 4. **Qualitative Comparison [Clip 14 - Frame 50].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

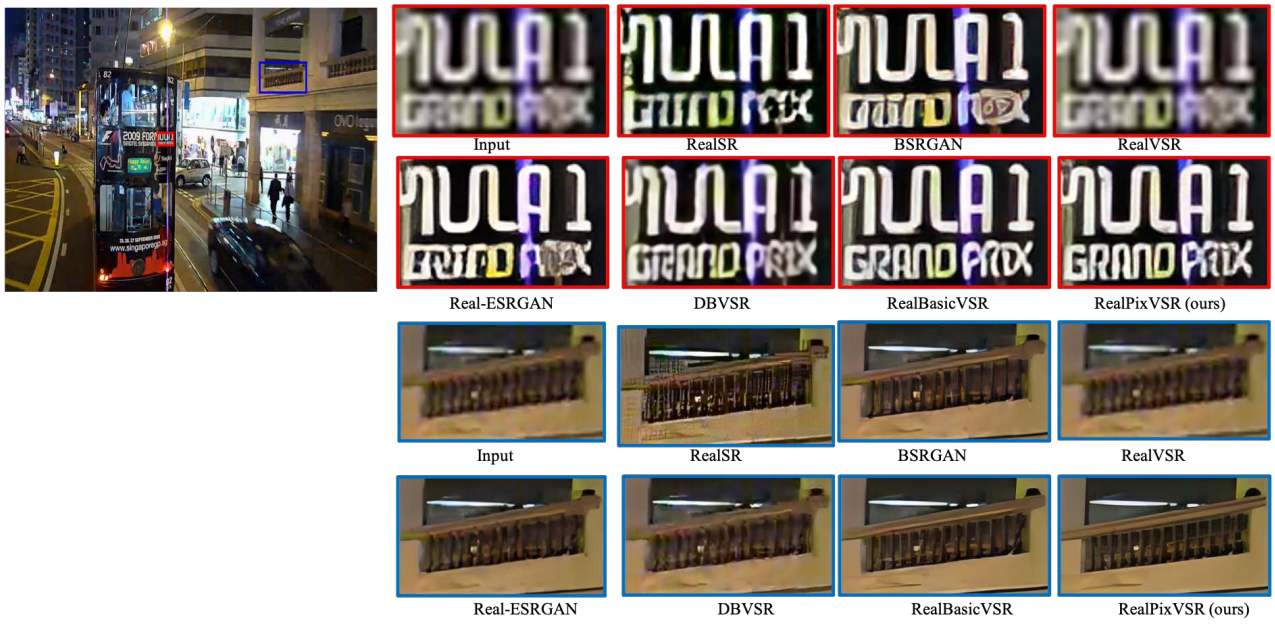

Figure 5. **Qualitative Comparison [Clip 15 - Frame 50].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

Figure 6. **Qualitative Comparison [Clip 20 - Frame 50].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

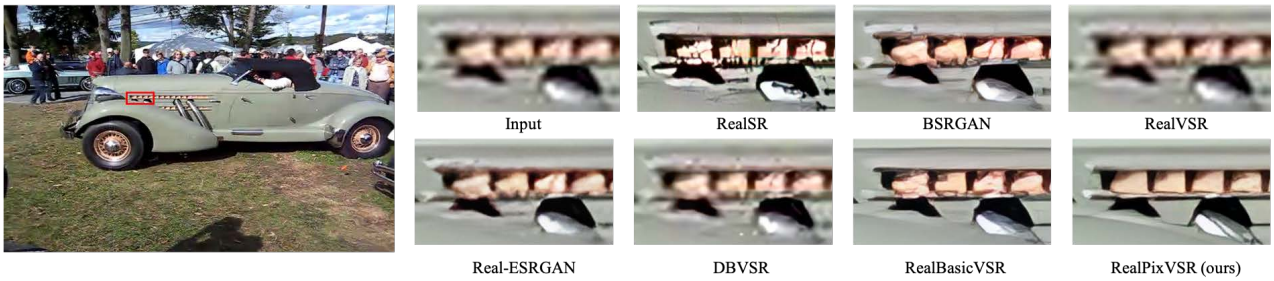

Figure 7. **Qualitative Comparison [Clip 21 - Frame 00].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

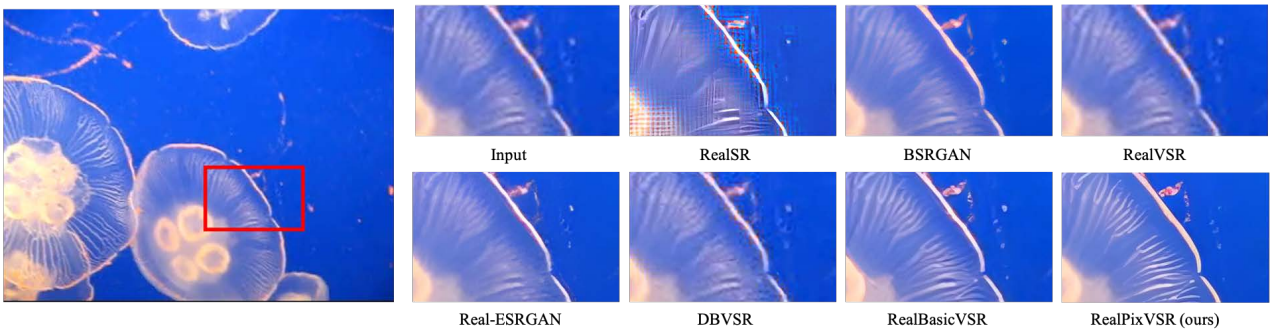

Figure 8. **Qualitative Comparison [Clip 01 - Frame 50].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

Figure 9. **Qualitative Comparison [Clip 30 - Frame 20].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

Figure 10. **Qualitative Comparison [Clip 37 - Frame 98].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

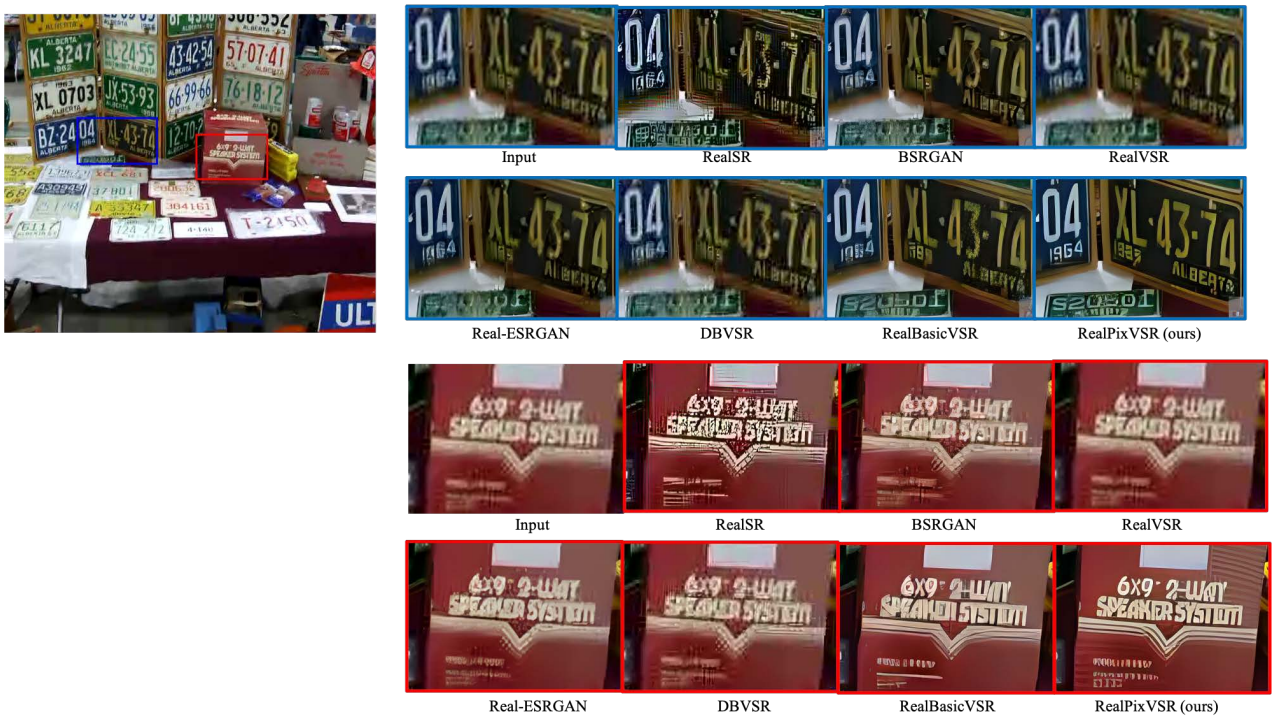

Figure 11. **Qualitative Comparison [Clip 41 - Frame 50].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.

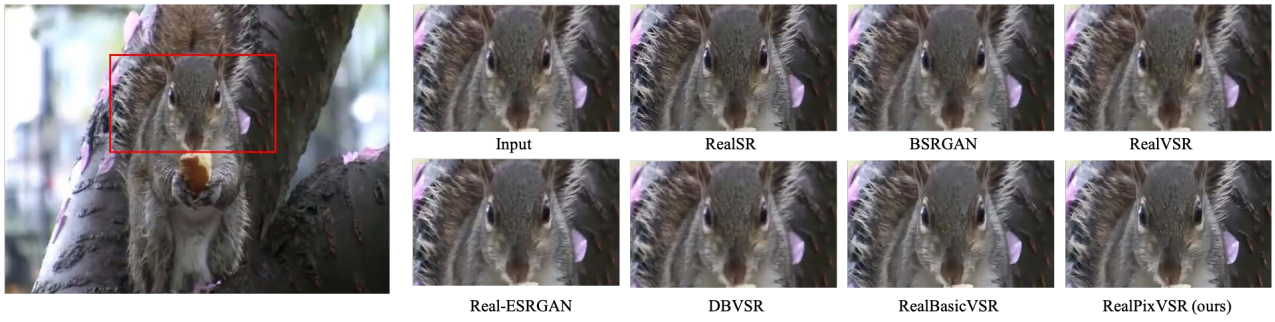

Figure 12. **Qualitative Comparison [Clip 45 - Frame 50].** The proposed RealPixVSR effectively uses the pixel-level degradation representation and its recurrent propagation to super-resolve images with more detail compared to other models.