

Response to Reviewer's Comments on paper 93

We thank the reviewers for their critical assessment of our work. In the following, we address their comments point by point.

A. Response to comments

A.1. Reviewer 1

Reply to review point 1.1:

We remove redundant and misleading information from the manuscript. We changed our title to "Lightweight Real-Time Image Super-Resolution Network for 4K images". We frame our paper to lightweight Image SR with 4K images.

Reply to review point 1.2:

We add extra qualitative results for X2 SISR in section 4.3. example of results is as follows:

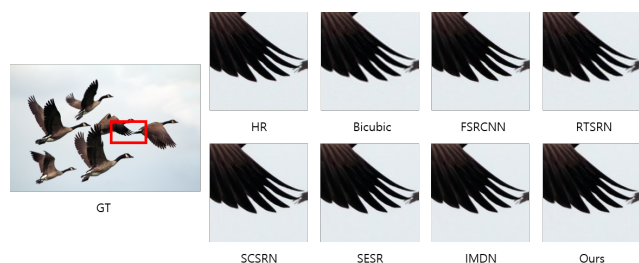


Figure 1. image 896 from DIV2K

Reply to review point 1.3:

We combined tables 3 and 4 into one table for ease of comparison in section 4.3. And We added challenge benchmark reference and provided network RTSRN in tables.

Reply to review point 1.4:

We added lightweight SR transformer-based methods in related work, Other methods such as transformer-based SISR have been researched [2] [5], showing significant performance improvements compared to other existing super-resolution techniques." And we also add citations about other methods [1,4,6] in related work

Reply to review point 1.5:

We calculate the additional metrics PSNR-Y and add them to Table 2. Also, We add the results of the method in the NTIRE2023 Real-Time Super-Resolution test set in table 1 and compare it with Bicubic and the top teams.

Reply to review point 1.6:

We added the results of the method in the NTIRE2023 Real-Time Super-Resolution test set in table 1 and included baseline methods.

Reply to review point 1.7:

We added the citation of GitHub repositories. The score is calculated by NTIRE2023 evaluation script [3].

Reply to review point 1.8:

Scale	Network	NTIRE2023 test			
		PSNR	SSIM	PSNR (Y)	Inference Time
X2	Bicubic	33.92	0.8829	36.66	0.45
	Noah_TerminalVision	35.02	0.8957	37.74	3.19
	ALONG	34.68	0.8906	37.38	1.91
	RTVSR	34.71	0.8910	37.50	2.24
	Team OV	34.62	0.8899	37.45	2.91
	Proposed work	35.02	0.8948	37.76	11.19
X3	Bicubic	31.30	0.8246	33.82	0.5
	Aselsan Research	32.06	0.8344	34.56	1.17
	Team OV	32.17	0.8376	34.72	1.51
	ALONG	32.18	0.8367	34.66	1.66
	RTVSR	32.22	0.8372	34.77	1.96
	Proposed work	32.59	0.8446	35.05	5.47

Table 1. Test phase results of NTIRE2023 Real-Time Super-Resolution Track1 and Track2

We added the GitHub repository in the Abstract section. The code is available at <https://github.com/Ganzoo/LRSRN.git>.

Reply to review point 1.9:

We add citations for NTIRE Challenge 4K benchmark testset in section 4.3.

A.2. Reviewer 2

Reply to review point:

Thank you for your review. We will improve our model for future work to be more efficient and complete.

References

- [1] Namhyuk Ahn, Byungkon Kang, and Kyung-Ah Sohn. Fast, accurate, and lightweight super-resolution with cascading residual network. In *Proceedings of the European conference on computer vision (ECCV)*, pages 252–268, 2018. 1
- [2] Marcos V Conde, Ui-Jin Choi, Maxime Burchi, and Radu Timofte. Swin2sr: Swin2 transformer for compressed image super-resolution and restoration. In *Computer Vision—ECCV 2022 Workshops: Tel Aviv, Israel, October 23–27, 2022, Proceedings, Part II*, pages 669–687. Springer, 2023. 1
- [3] NTIRE2023 evaluation script. <https://github.com/eduardzamfir/NTIRE23-RTSR>. 1
- [4] Zheng Hui, Xinbo Gao, Yunchu Yang, and Xiumei Wang. Lightweight image super-resolution with information multi-distillation network. In *Proceedings of the 27th acm international conference on multimedia*, pages 2024–2032, 2019. 1
- [5] Jingyun Liang, Jiezhong Cao, Guolei Sun, Kai Zhang, Luc Van Gool, and Radu Timofte. Swinir: Image restoration using swin transformer. In *Proceedings of the IEEE/CVF international conference on computer vision*, pages 1833–1844, 2021. 1
- [6] Jie Liu, Jie Tang, and Gangshan Wu. Residual feature distillation network for lightweight image super-resolution. In *Computer Vision—ECCV 2020 Workshops: Glasgow, UK, August 23–28, 2020, Proceedings, Part III 16*, pages 41–55. Springer, 2020. 1

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