

Dual-Pixel Raindrop Removal

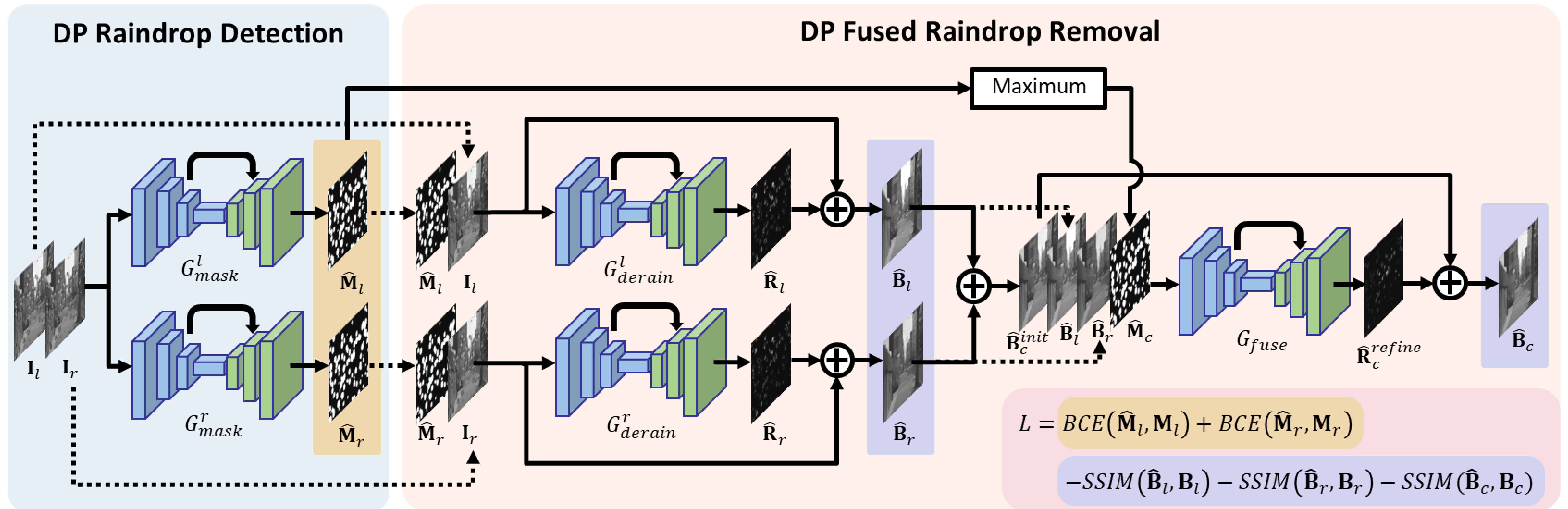
BMVC2022 Supplementary Materials

Tokyo Institute of Technology

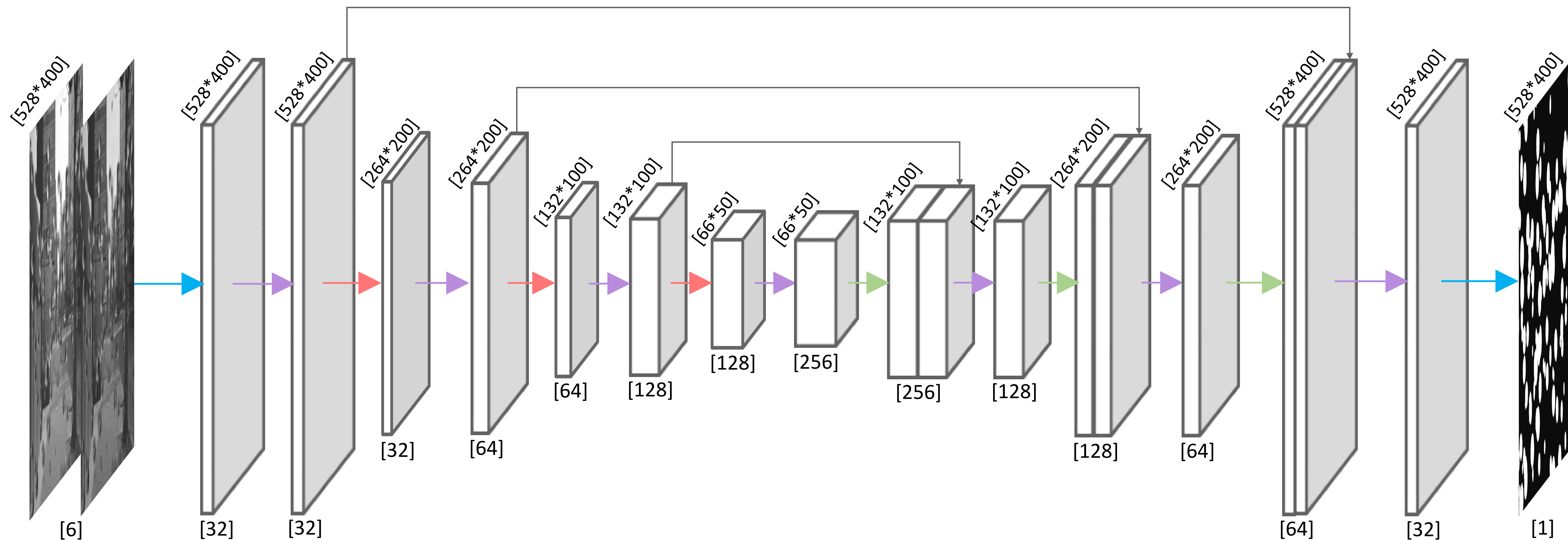
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Network Architecture

Overall Network Architecture: DPRRN



Network Architecture: G_{mask}



Input

G_{mask}^l :

- Left-half input image I_l
- Right-half input image I_r

G_{mask}^r :

- Right-half input image I_r
- Left-half input image I_l

—→ forward

—→ conv

—→ max pooling

—→ residual block

—→ bilinear upsampling + conv

Output

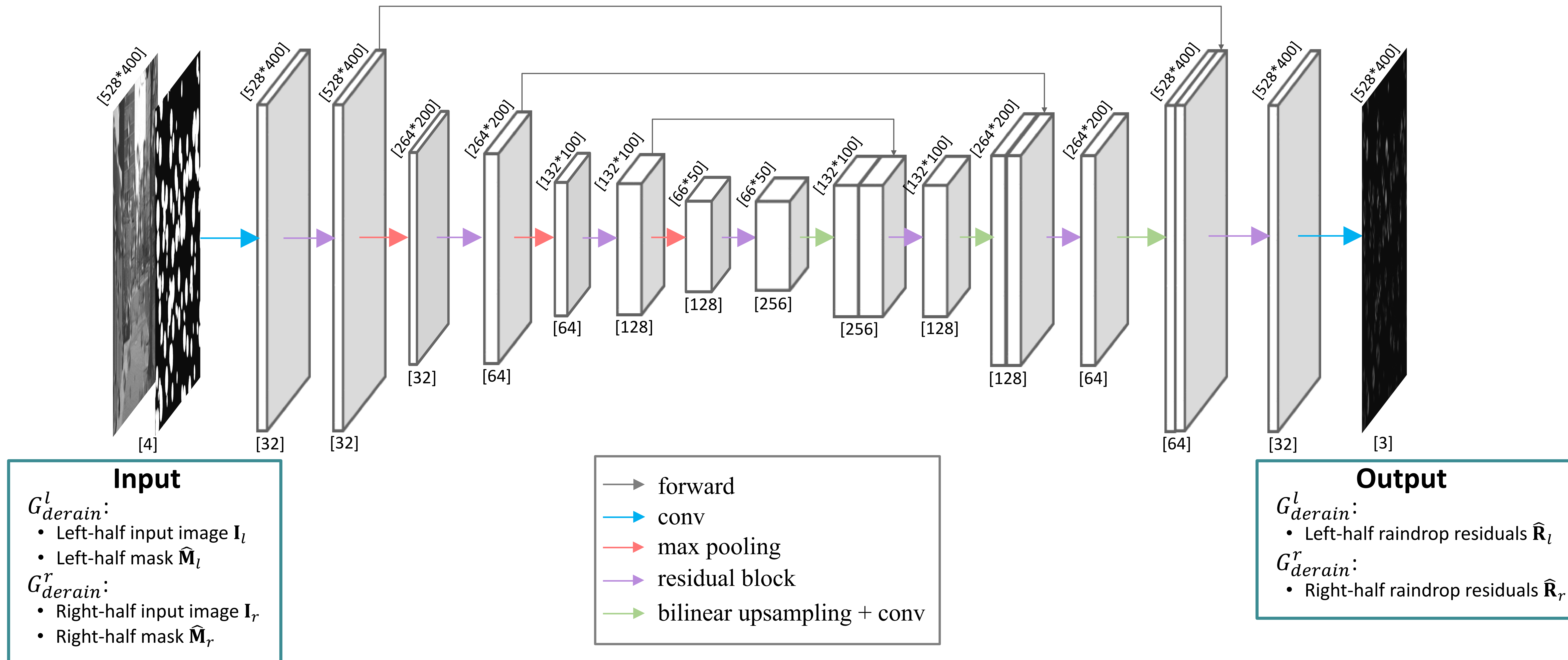
G_{mask}^l :

- Left-half mask \hat{M}_l

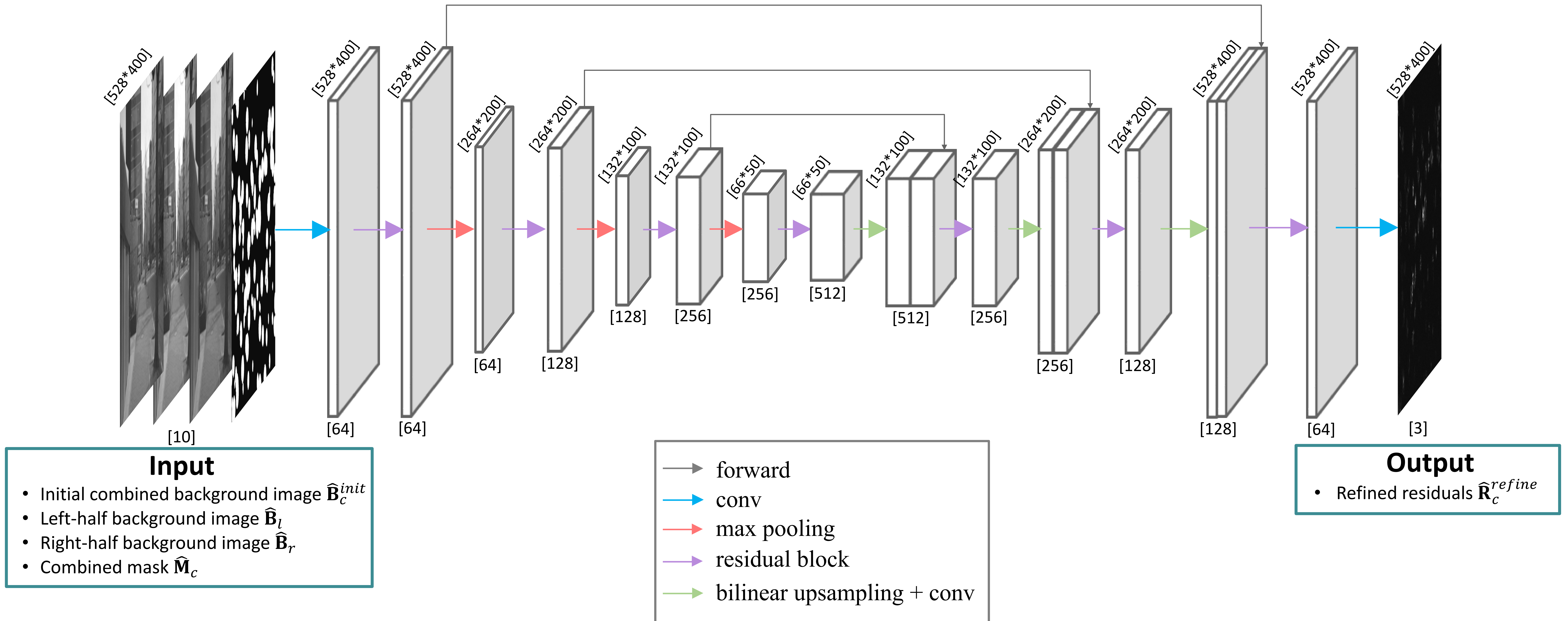
G_{mask}^r :

- Right-half mask \hat{M}_r

Network Architecture: G_{derain}



Network Architecture: G_{fuse}



Results on Synthetic-Raindrop Dataset

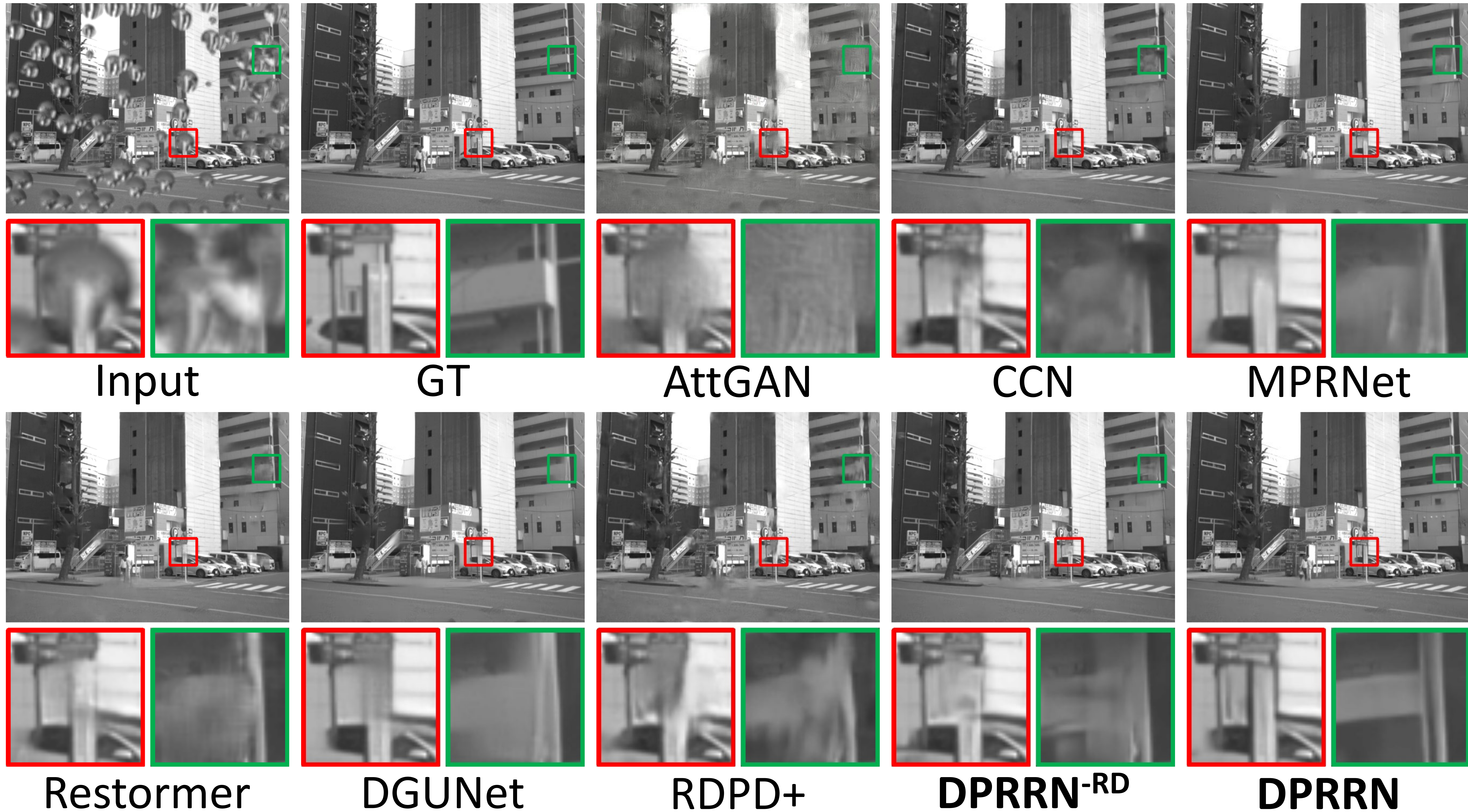
Quantitative: Synthetic-Raindrop Dataset

The quantitative comparison on Proposed Synthetic-Raindrop Dataset
(**Red**: the best result; **Blue**: the second best result).

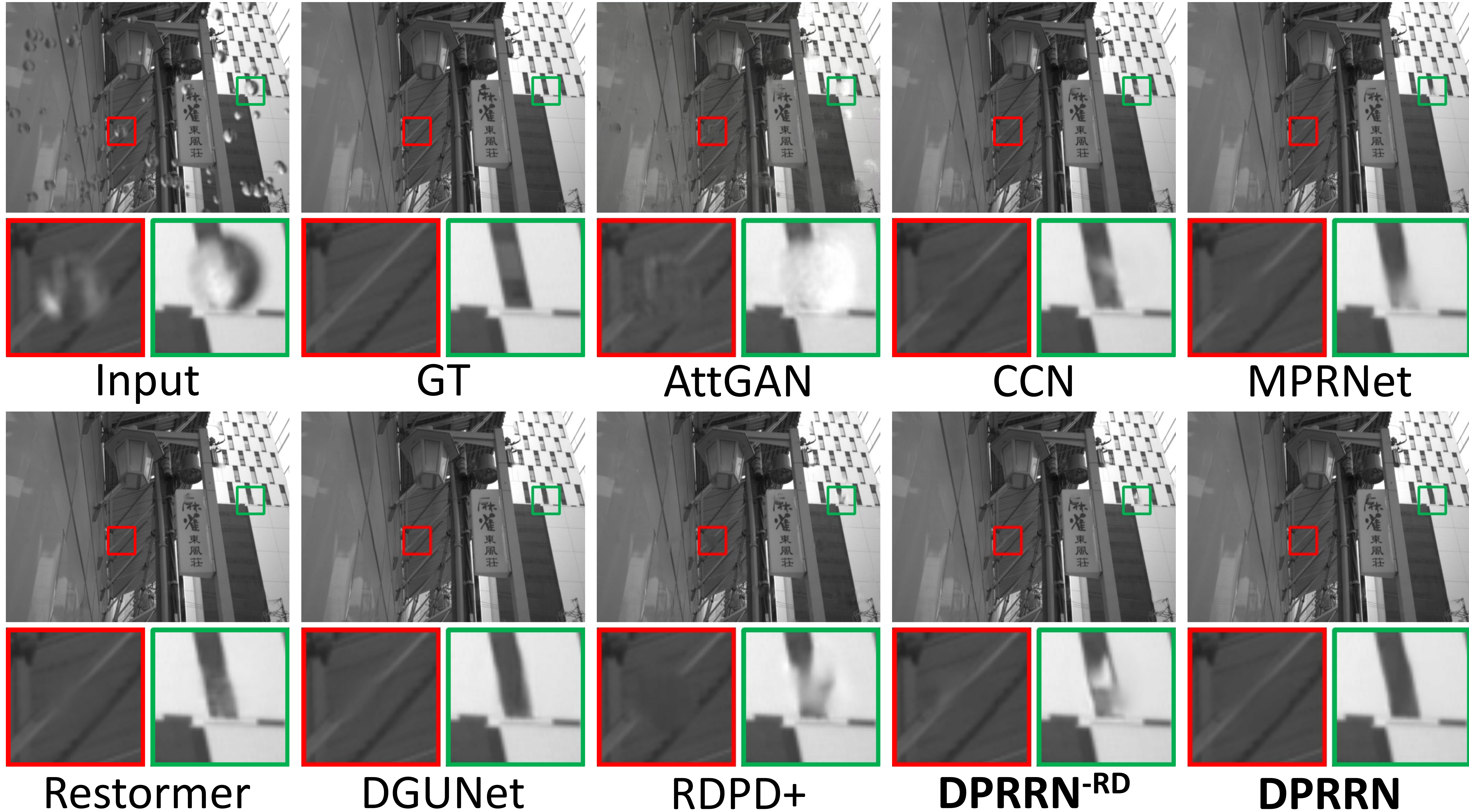
Input Image Types	Methods	Synthetic	
		PSNR	SSIM
Regular	AttGAN (CVPR2018) [26]	34.55	0.9614
	CCN (CVPR2021) [27]	38.88	0.9790
	MPRNet (CVPR2021) [39]	41.02	0.9828
	Restormer (CVPR2022) [40]	41.94	0.9845
	DGUNet (CVPR2022) [20]	41.32	0.9835
Dual Pixel	RDPD+ (ICCV2021) [5]	40.51	0.9809
	DPRRN^{-RD} (Ours)	40.93	0.9824
	DPRRN (Ours)	42.70	0.9867

- Training pairs: 1960
- Test pairs: 492

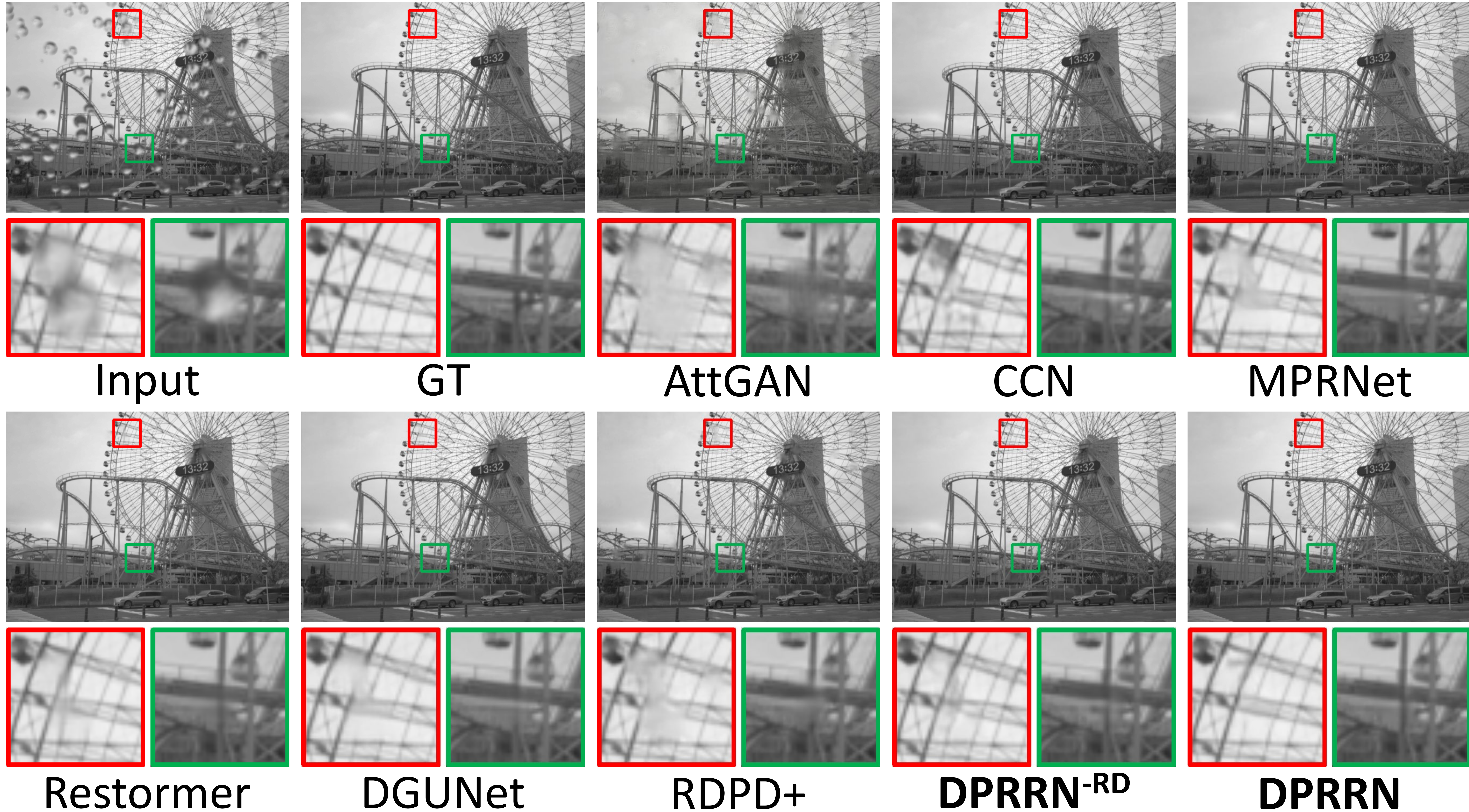
Qualitative: Synthetic-Raindrop Dataset



Qualitative: Synthetic-Raindrop Dataset



Qualitative: Synthetic-Raindrop Dataset



Results on Real-World Dataset

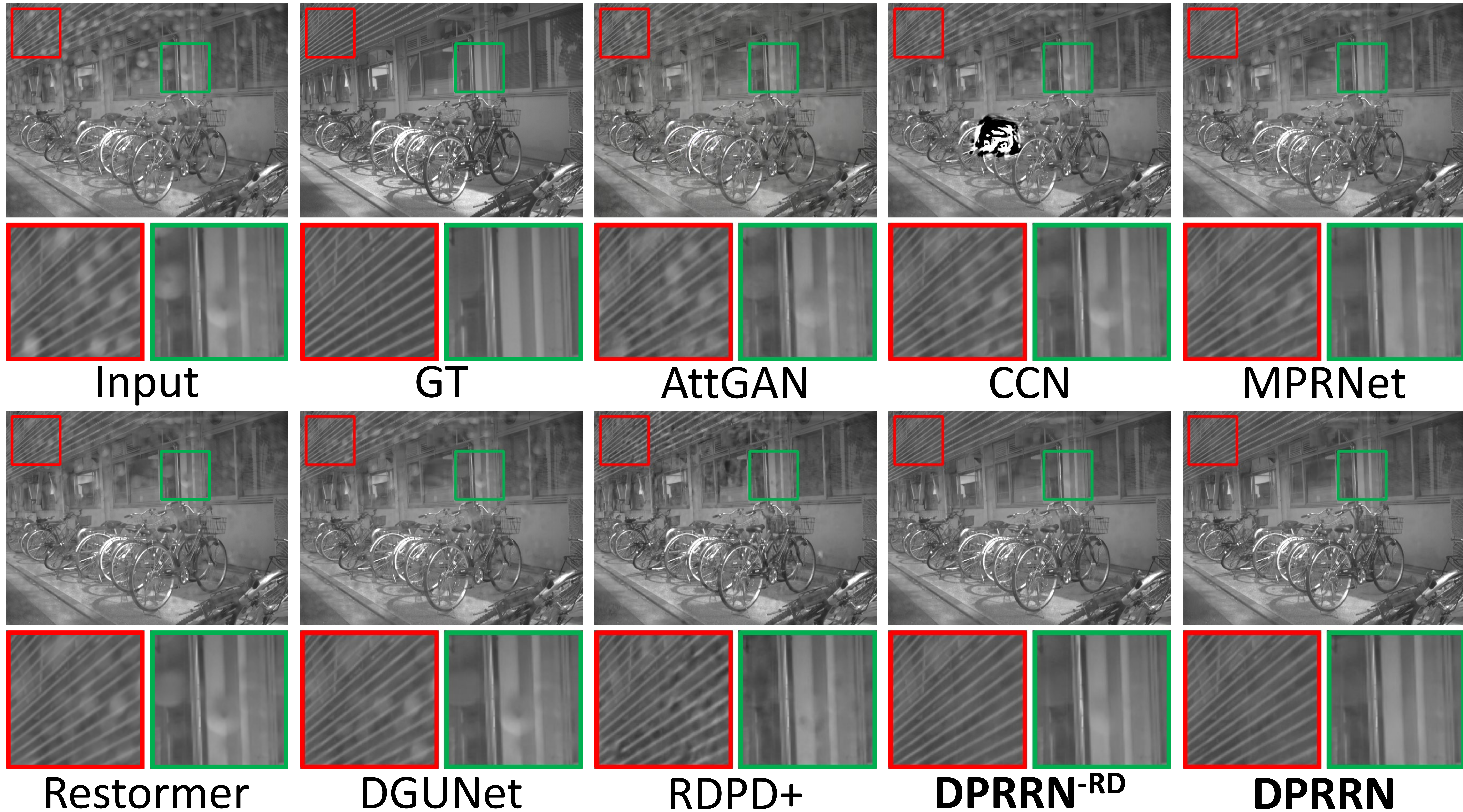
Quantitative: Real-World Dataset

The quantitative comparison on Proposed Real-World Dataset
(**Red**: the best result; **Blue**: the second best result).

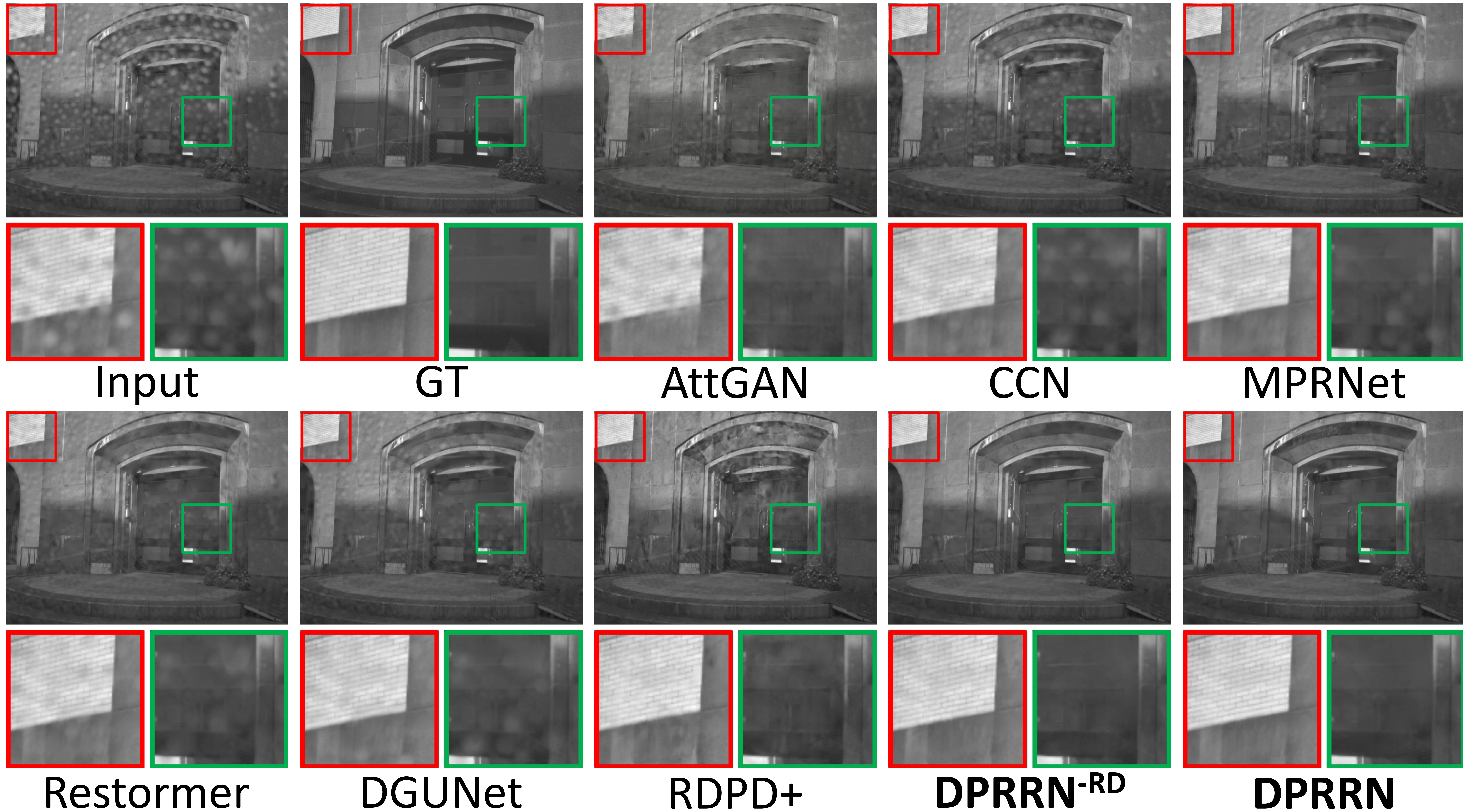
Input Image Types	Methods	Real-World	
		PSNR	SSIM
Regular	AttGAN (CVPR2018) [26]	29.59	0.9127
	CCN (CVPR2021) [27]	27.92	0.9001
	MPRNet (CVPR2021) [39]	30.83	0.9247
	Restormer (CVPR2022) [40]	30.88	0.9248
	DGUNet (CVPR2022) [20]	31.08	0.9259
Dual Pixel	RDPD+ (ICCV2021) [5]	31.18	0.9205
	DPRRN^{-RD} (Ours)	31.85	0.9357
	DPRRN (Ours)	32.47	0.9396

- Test pairs: 82

Qualitative: Real-World Dataset



Qualitative: Real-World Dataset



Qualitative: Real-World Dataset

