Enhancing Spatial Resolution of Stereo Images using a Parallax Prior
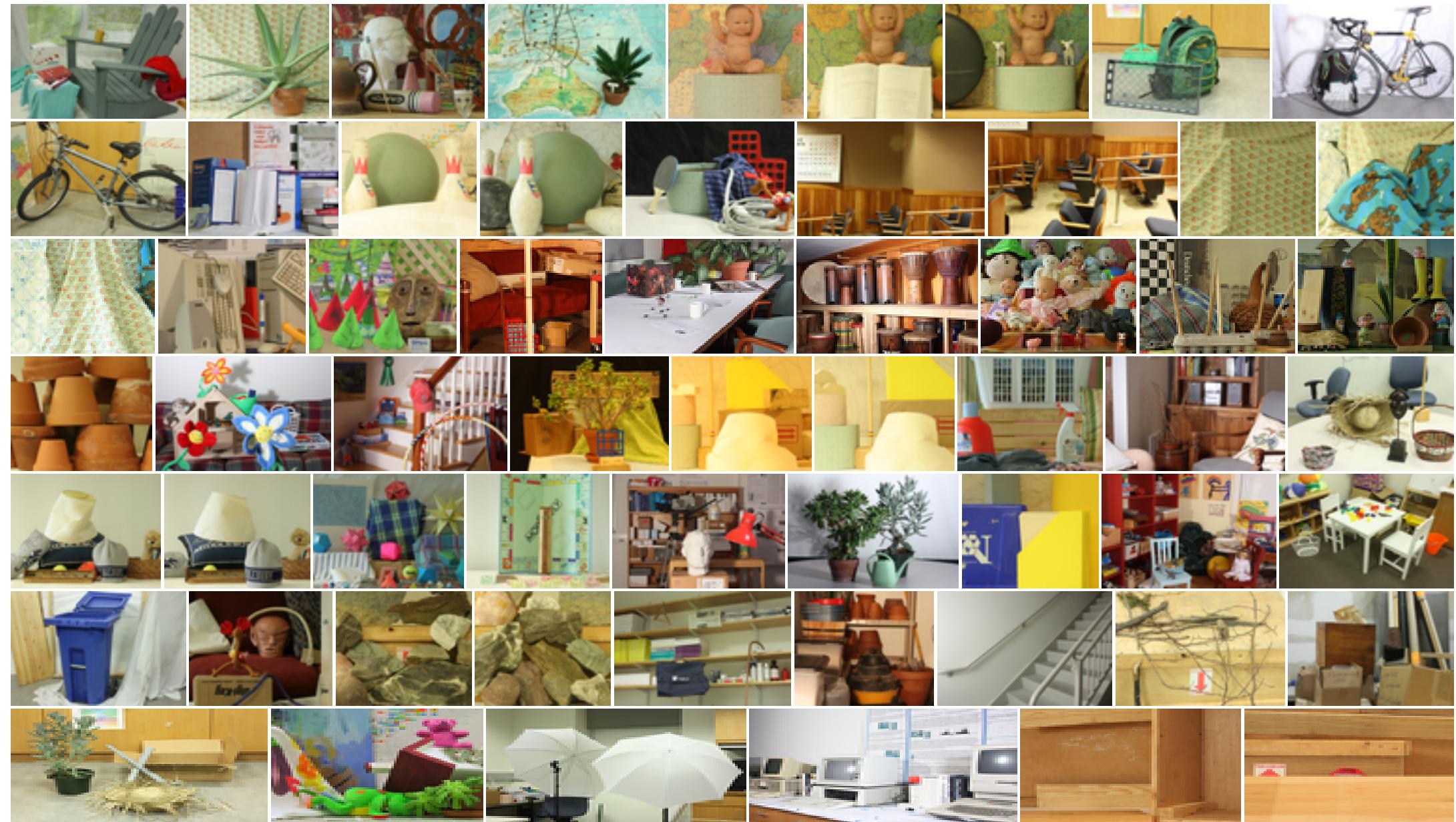
Supplemental Materials

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Training Dataset (60 images)

Training images are selected from the Middlebury dataset (65 images in total).
The thumbnail images are in a low resolution due to the size limitation of submission.

Comparison with Stereo Super-Resolution Algorithm (with Test Datasets)
Scale factor: x2   Dataset: [Middlebury]   Image number: 1

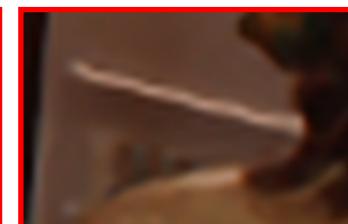| Ground Truth	Bicubic	Bhavsar 2010	Our method
(PSNR, SSIM)	(30.01, 0.8528)	(26.28, 0.7978)	(32.12, 0.8969)

Comparison with Stereo Super-Resolution Algorithm (with Test Datasets)

Scale factor: x2   Dataset: [Middlebury]   Image number: 2

Ground Truth	Bicubic	Bhavsar 2010	Our method
(PSNR, SSIM)	(25.47, 0.8528)	(20.76, 0.7293)	(28.58, 0.9160)

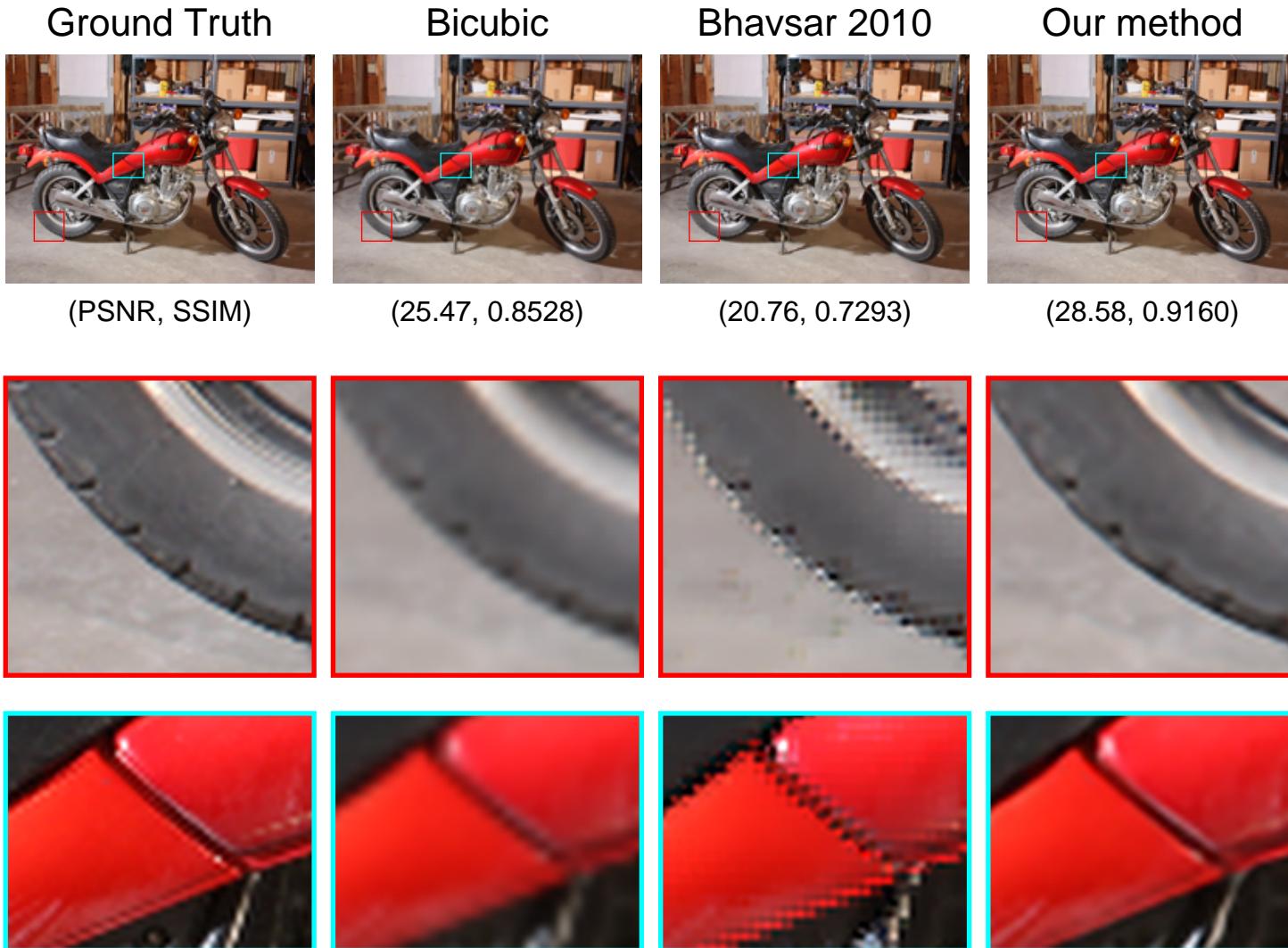# Comparison with Stereo Super-Resolution Algorithm (with Test Datasets)
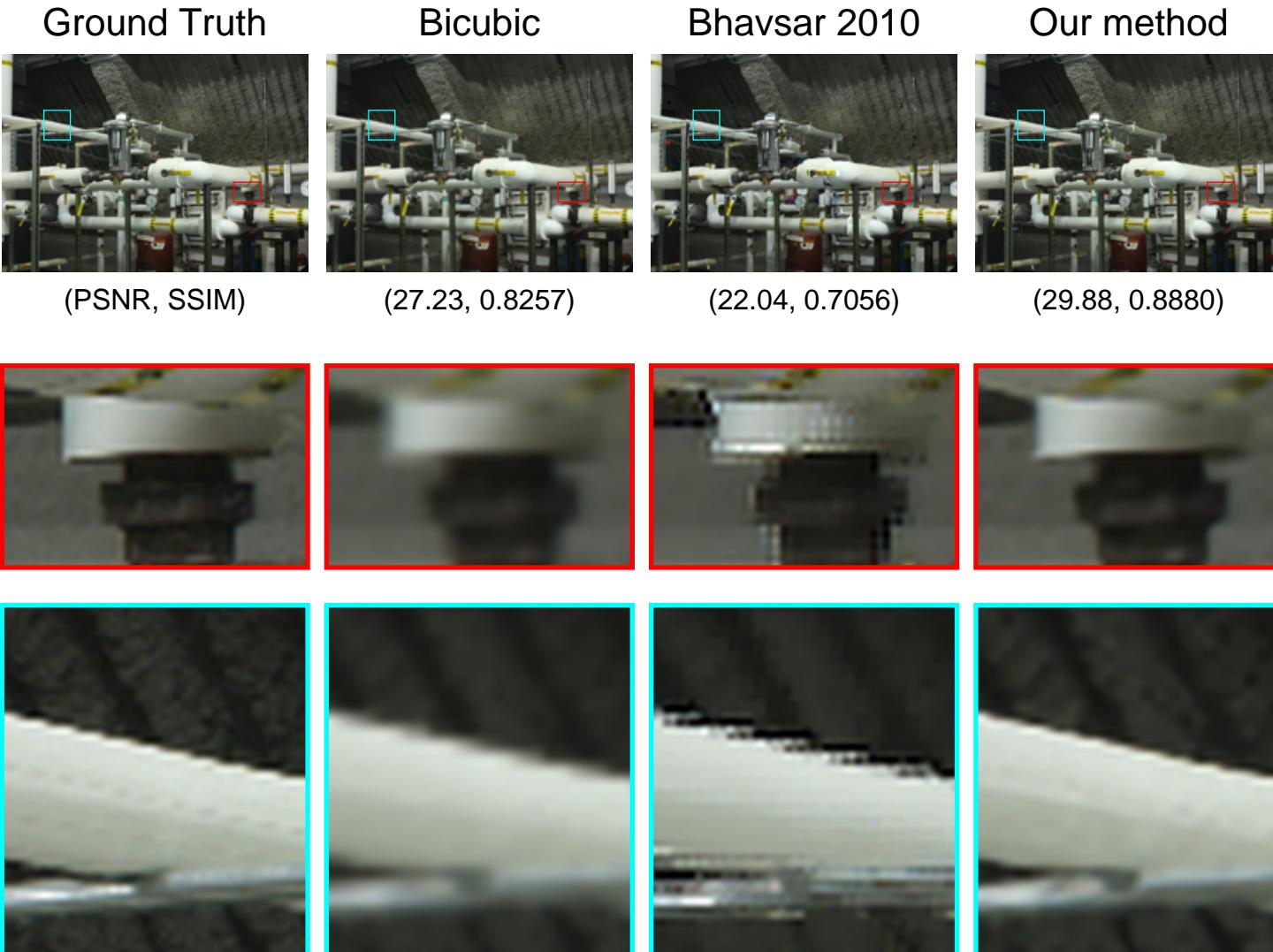## Scale factor: x2   Dataset: [Middlebury]   Image number: 3

Ground Truth	Bicubic	Bhavsar 2010	Our method

(PSNR, SSIM)	(27.23, 0.8257)	(22.04, 0.7056)	(29.88, 0.8880)

Comparison with Stereo Super-Resolution Algorithm (with Test Datasets)
Scale factor: x2   Dataset: [Middlebury]   Image number: 4

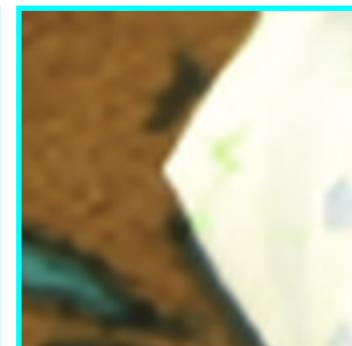| Ground Truth	Bicubic	Bhavsar 2010	Our method
(PSNR, SSIM)	(32.00, 0.8781)	(26.85, 0.8074)	(35.90, 0.9429)

Comparison with Stereo Super-Resolution Algorithm (with Test Datasets)
Scale factor: x2   Dataset: [Middlebury]   Image number: 5

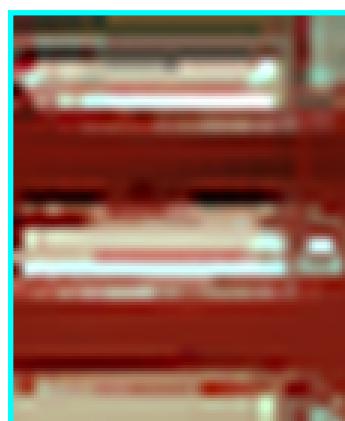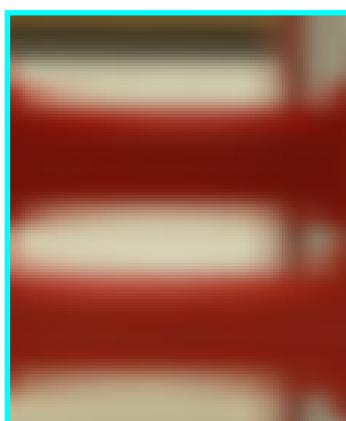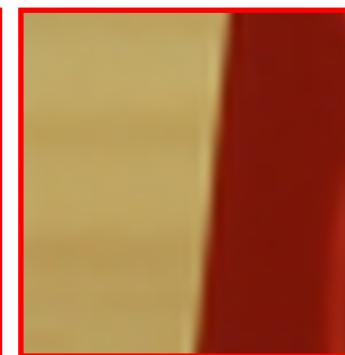| Ground Truth	Bicubic	Bhavsar 2010	Our method
(PSNR, SSIM)	(32.57, 0.9487)	(24.60, 0.8503)	(39.96, 0.9767)

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x2   Dataset: [Tsukuba]   Image number: 7
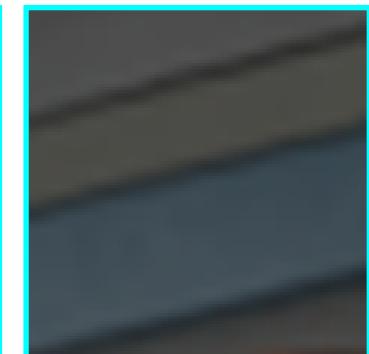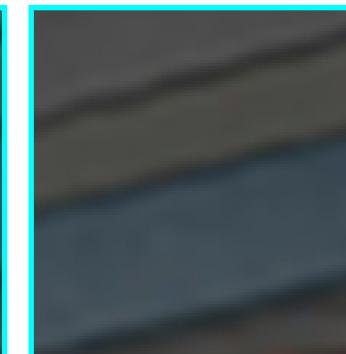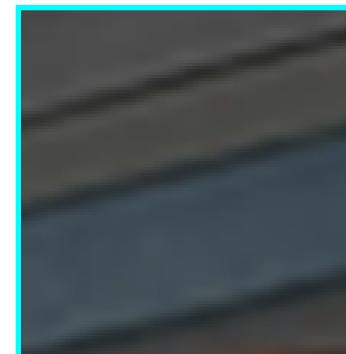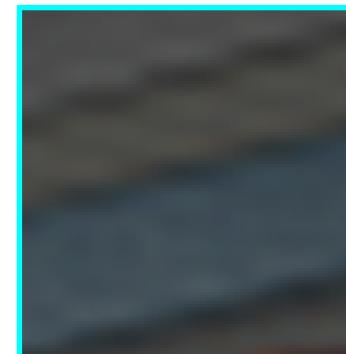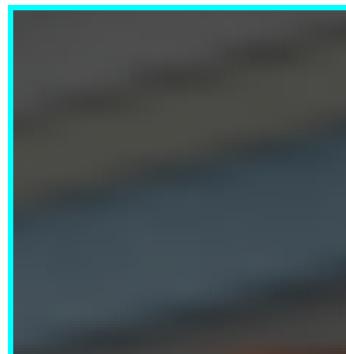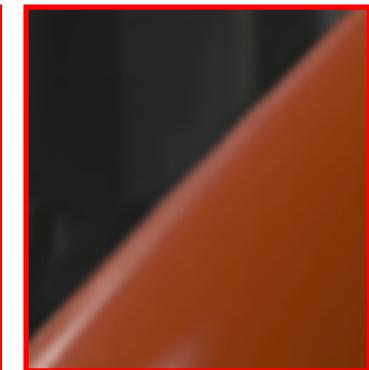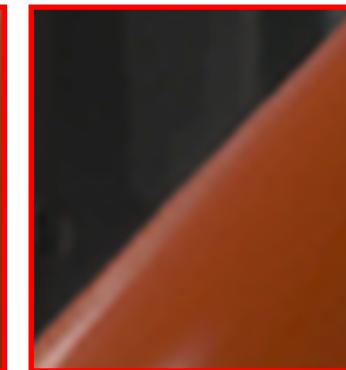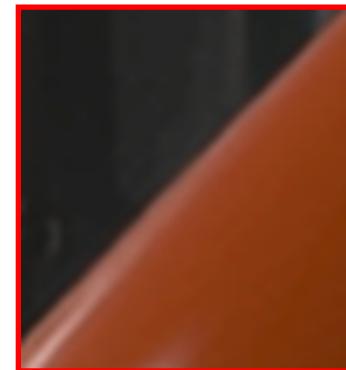
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(36.76, 0.9750)	(39.92, 0.9843)	(40.08, 0.9817)	(40.60, 0.9819)	(42.49, 0.9906)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
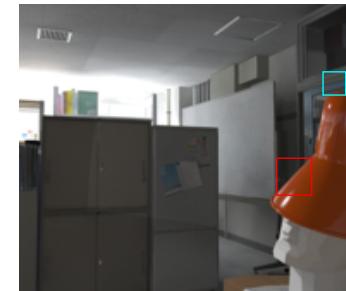## Scale factor: x3   Dataset: [Tsukuba]   Image number: 7
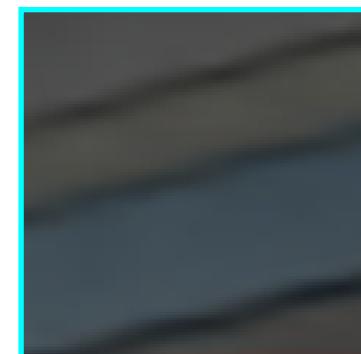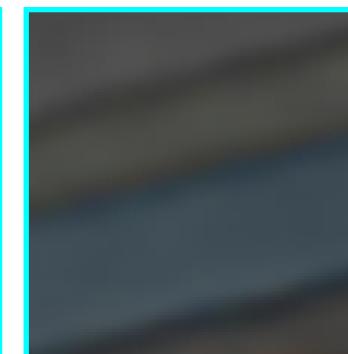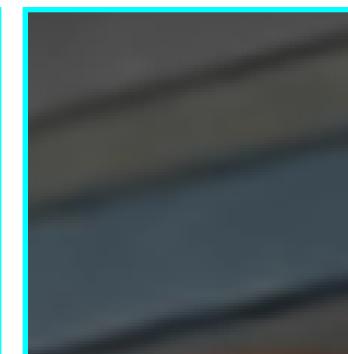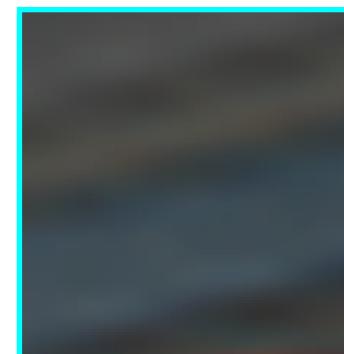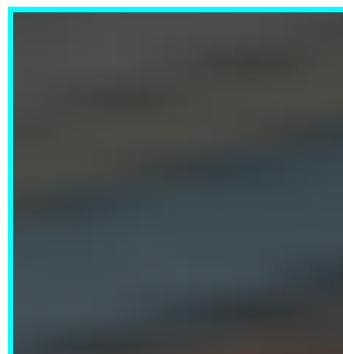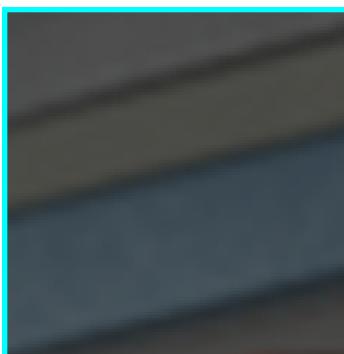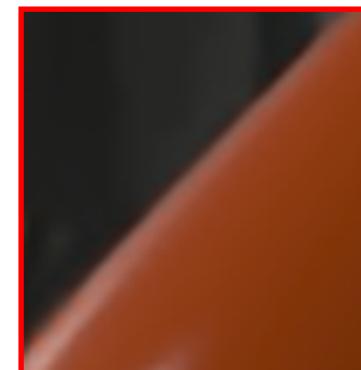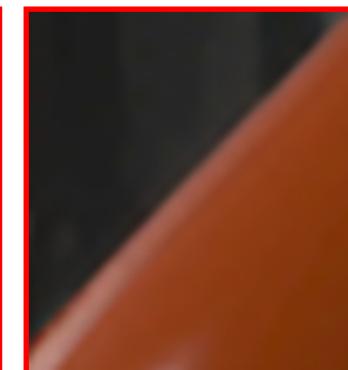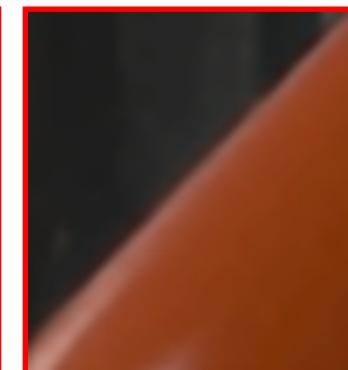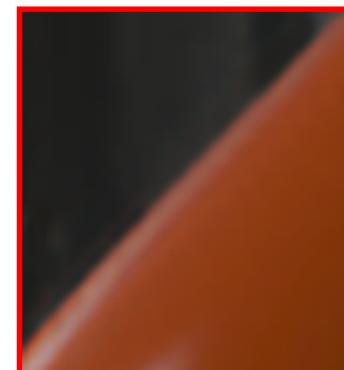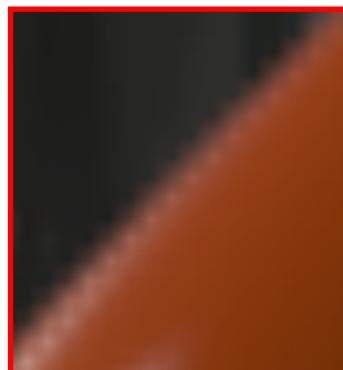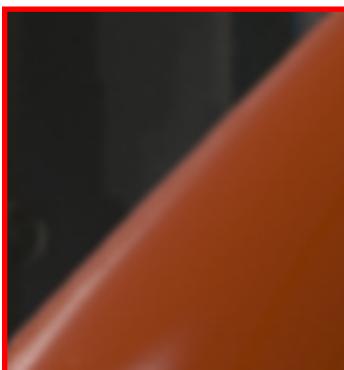
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(33.05, 0.9463)	(35.15, 0.9635)	(35.55, 0.9644)	(35.53, 0.9642)	(36.12, 0.9711)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
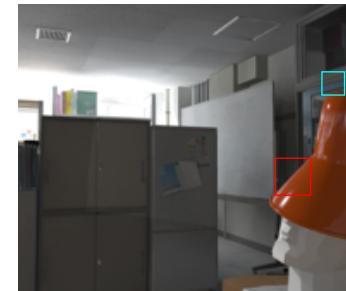## Scale factor: x4   Dataset: [Tsukuba]   Image number: 7
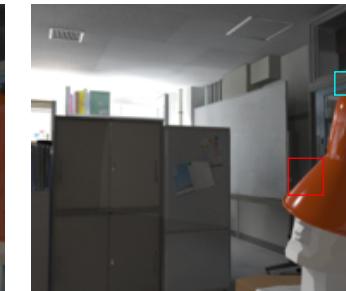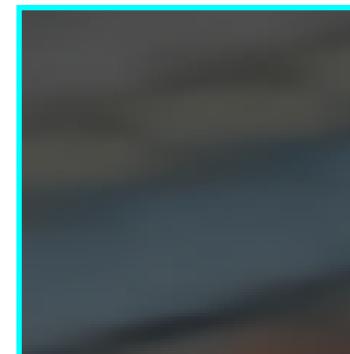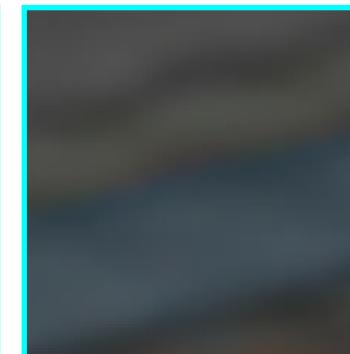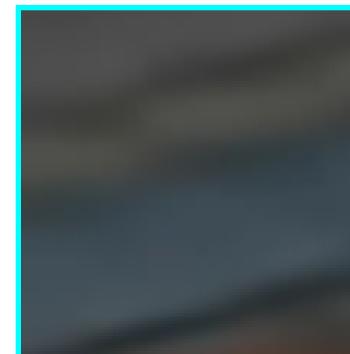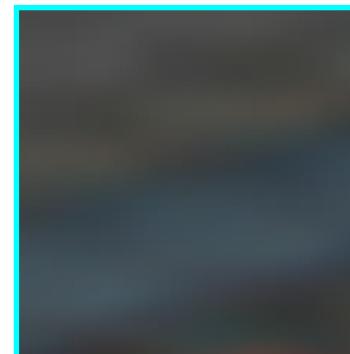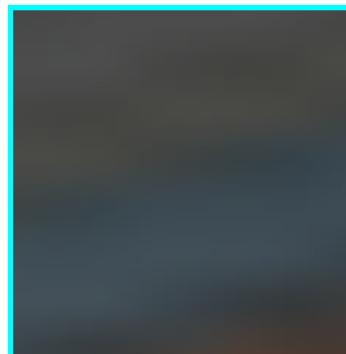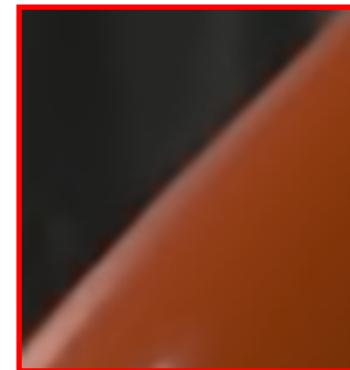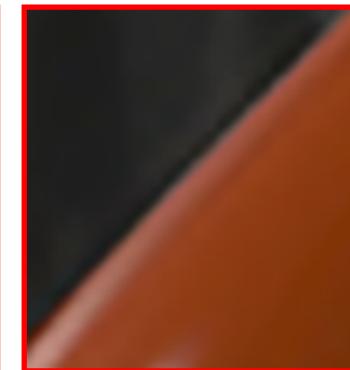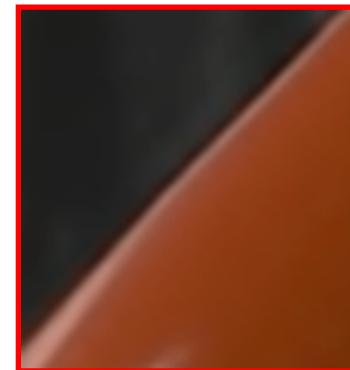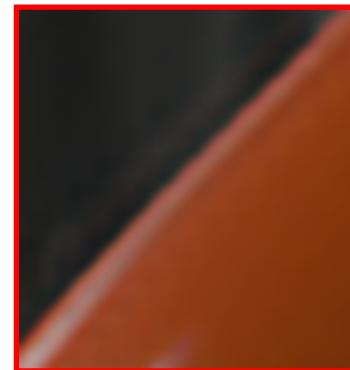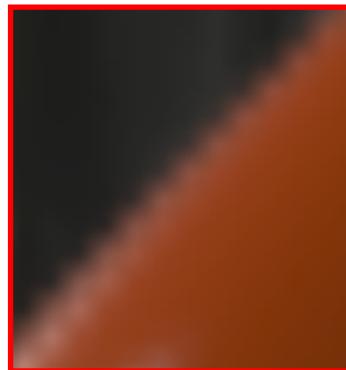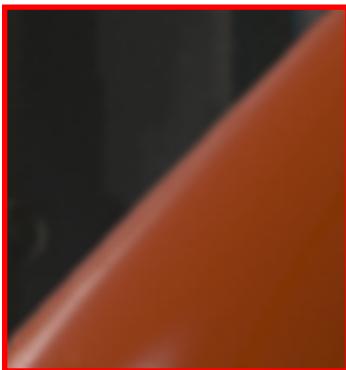
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(31.27, 0.9213)	(33.66, 0.9430)	(33.73, 0.9439)	(34.08, 0.9447)	(34.45, 0.9503)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x2   Dataset: [KITTI 2015]   Image number: 31
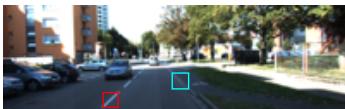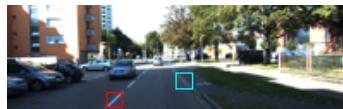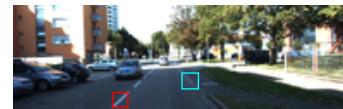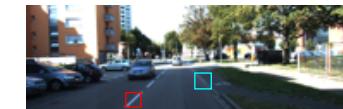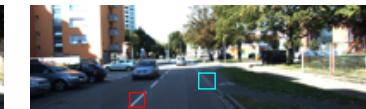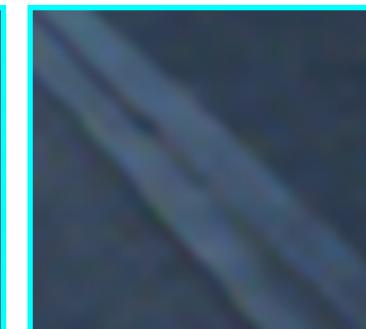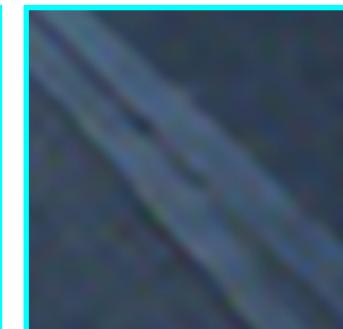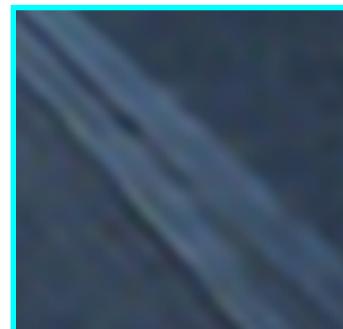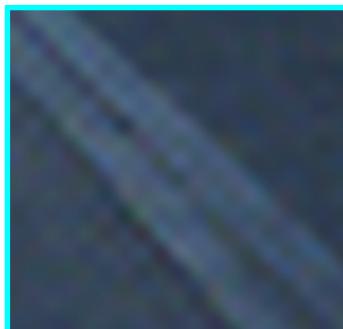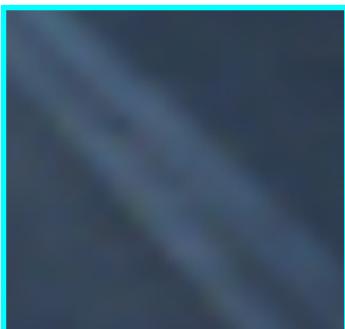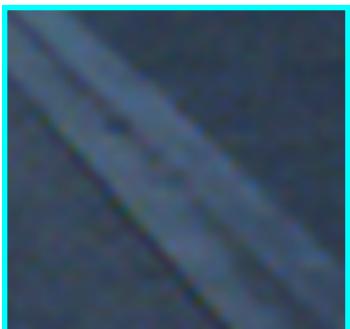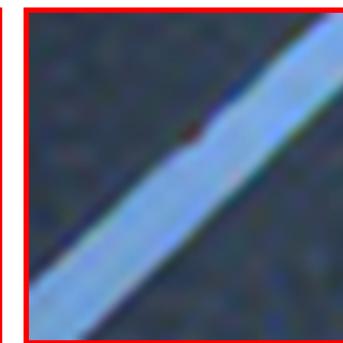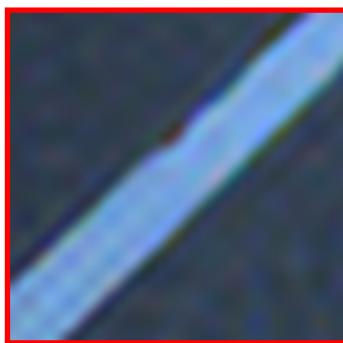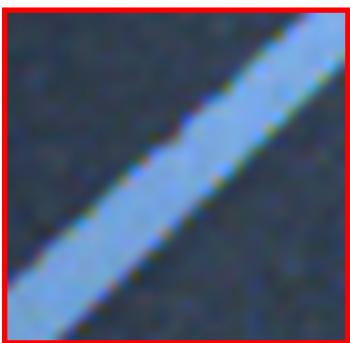
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(24.41, 0.8566)	(25.54, 0.9026)	(25.58, 0.8961)	(25.74, 0.9015)	(26.26, 0.9083)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x3   Dataset: [KITTI 2015]   Image number: 31
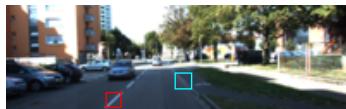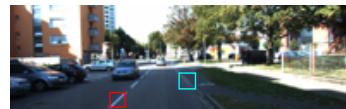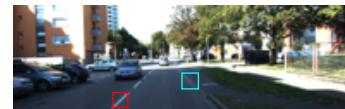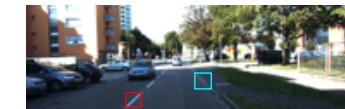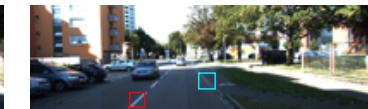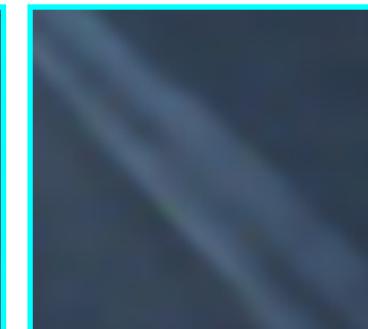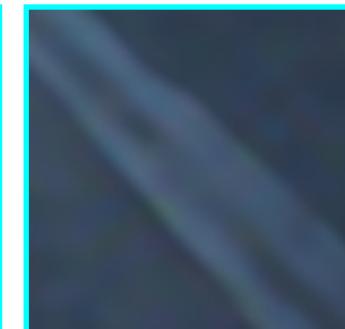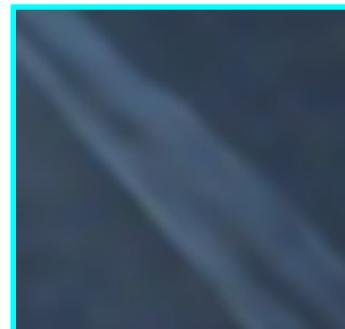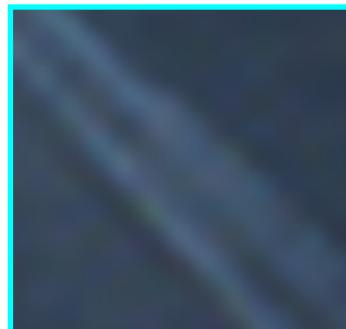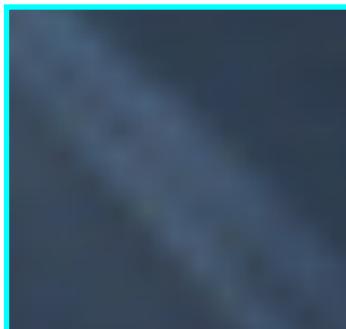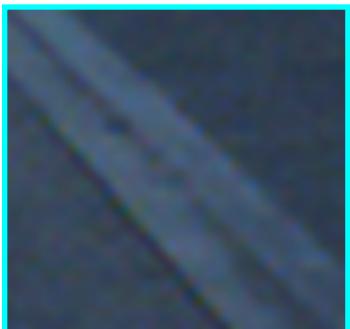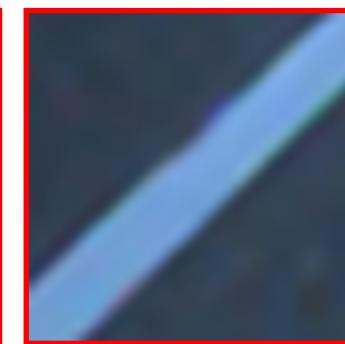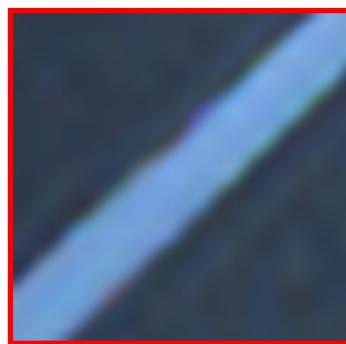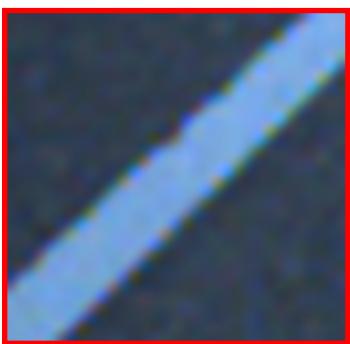
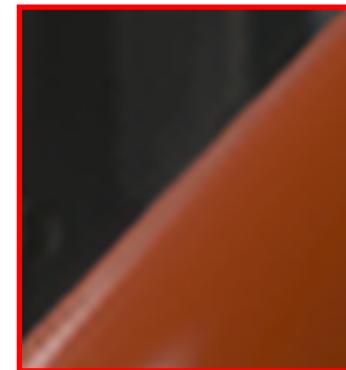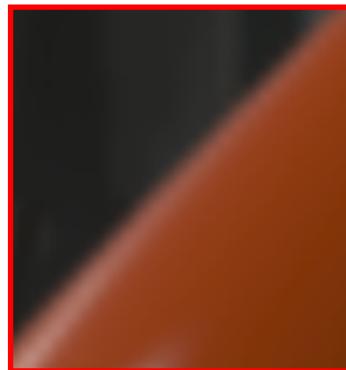| Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(22.13, 0.7579)	(23.22, 0.8165)	(23.31, 0.8173)	(23.33, 0.8195)	(23.68, 0.8216)
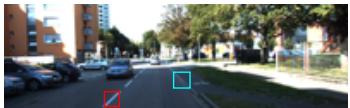
Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x4   Dataset: [KITTI 2015]   Image number: 31
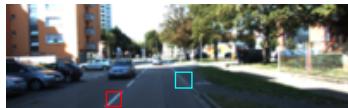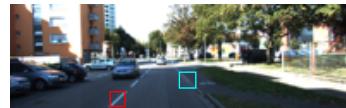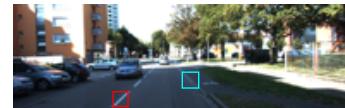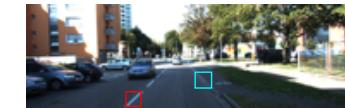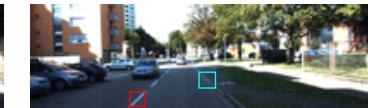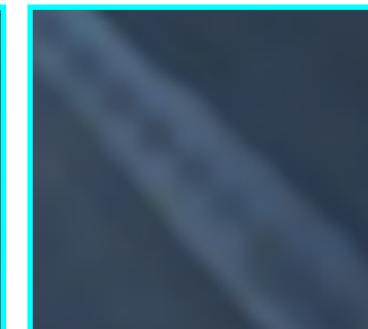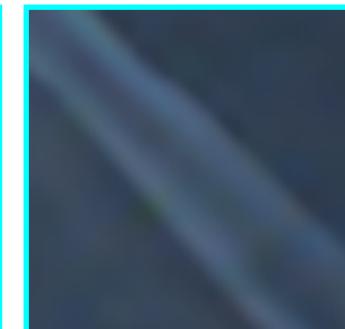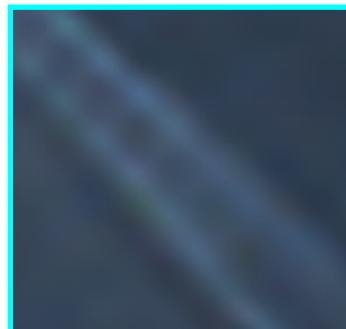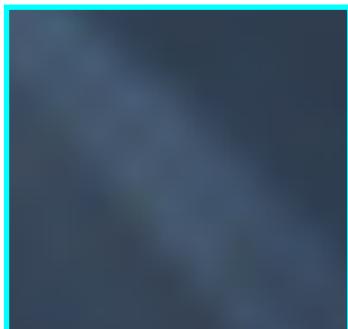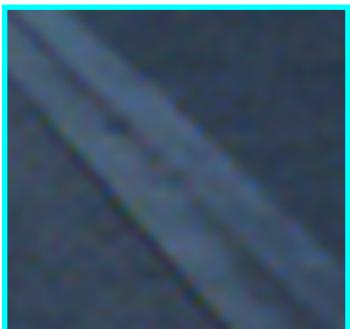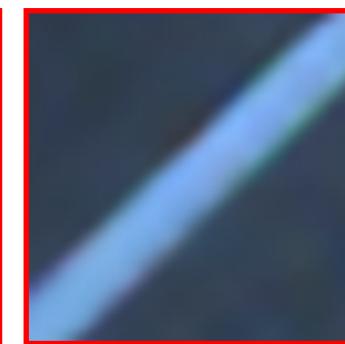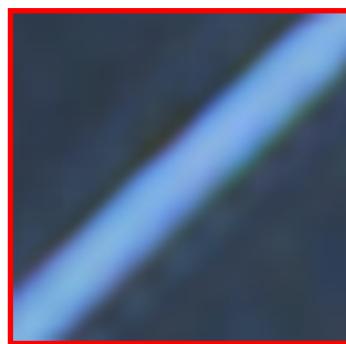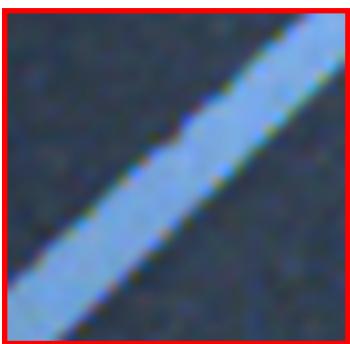
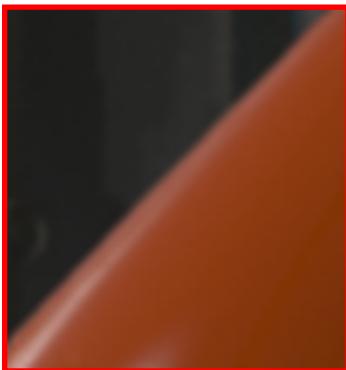| Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(20.83, 0.6809)	(21.65, 0.7435)	(21.67, 0.7481)	(21.80, 0.7500)	(22.19, 0.7488)
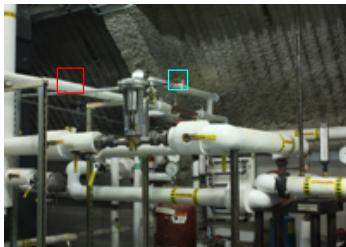
Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
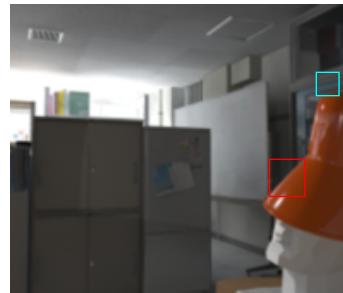## Scale factor: x2   Dataset: [Middlebury]   Image number: 3
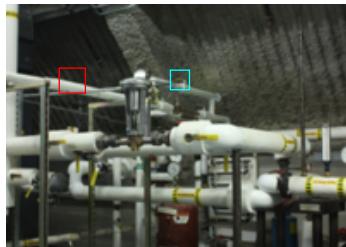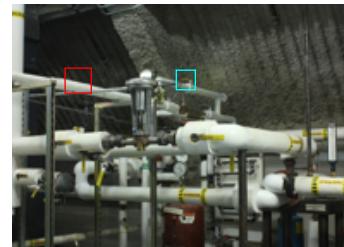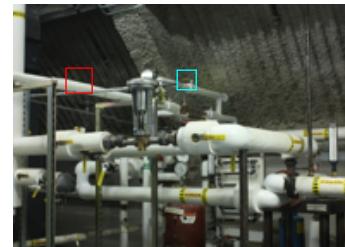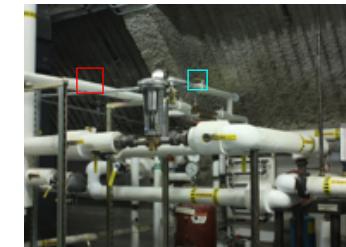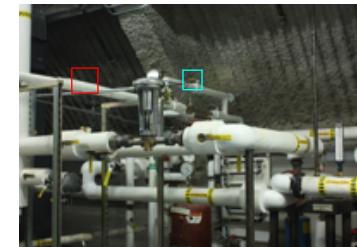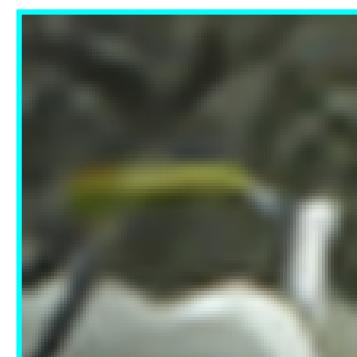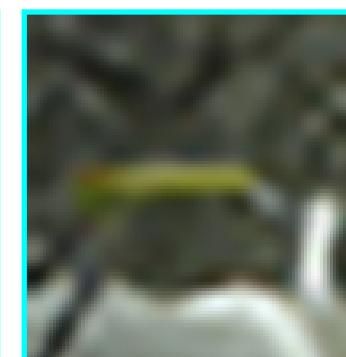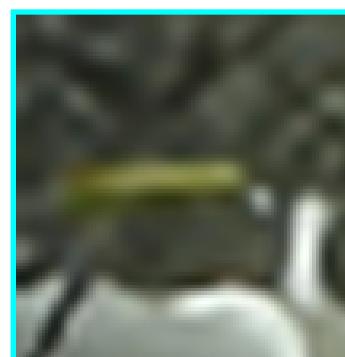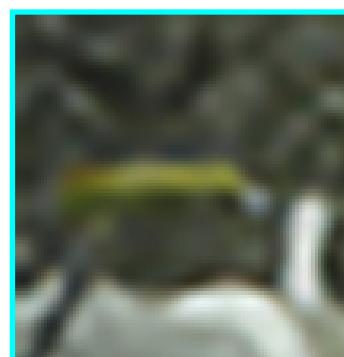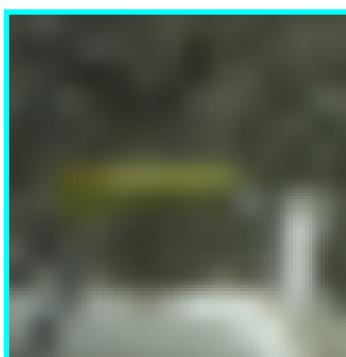
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(27.23, 0.8257)	(28.79, 0.8768)	(28.73, 0.8768)	(28.86, 0.8775)	(29.88, 0.8880)
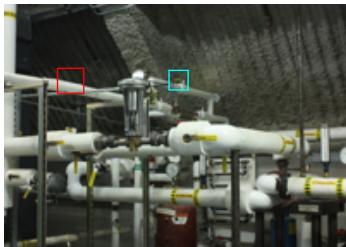
Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.
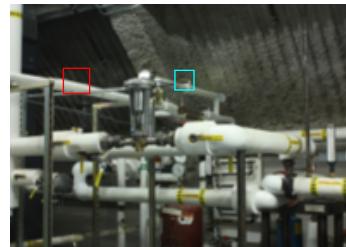
Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
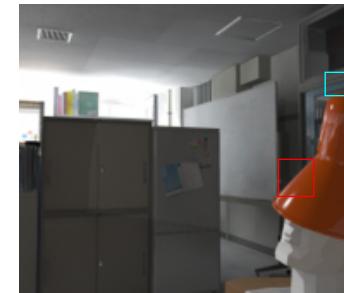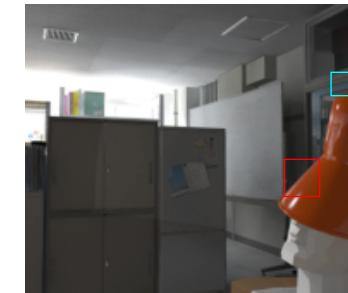## Scale factor: x3   Dataset: [Middlebury]   Image number: 3
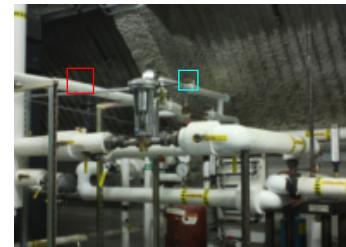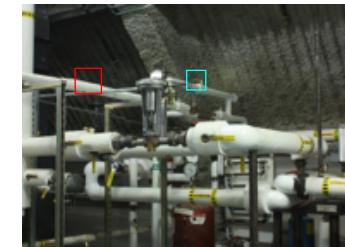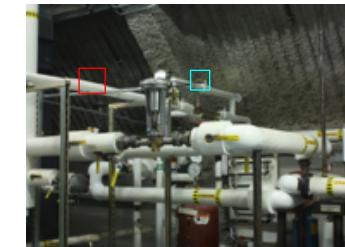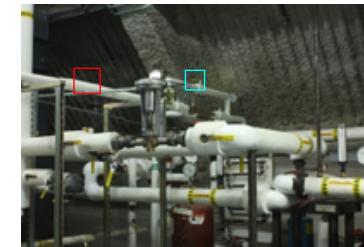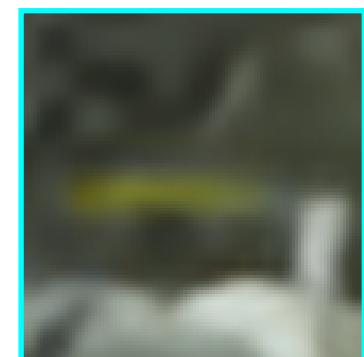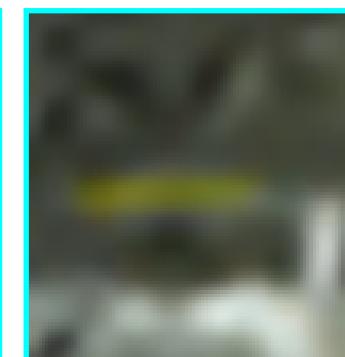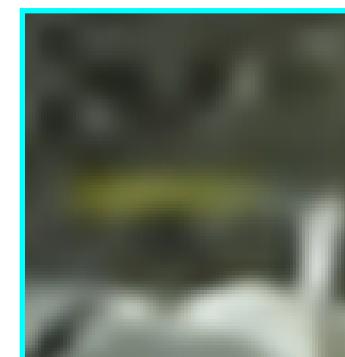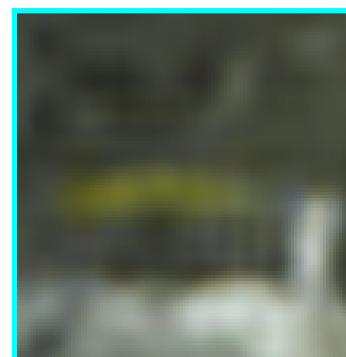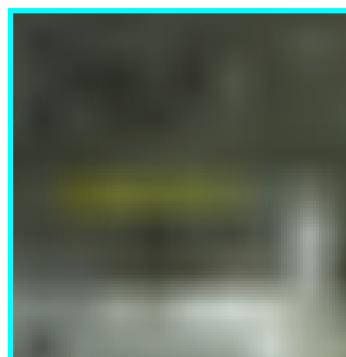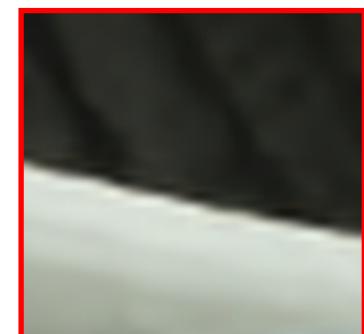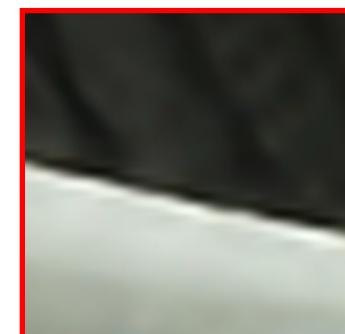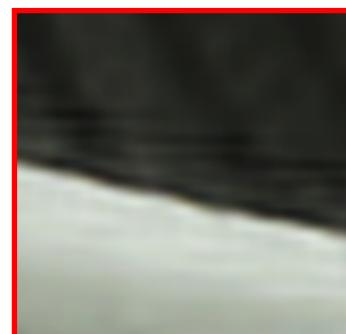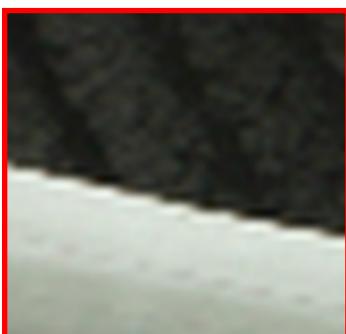
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(25.09, 0.7323)	(26.45, 0.7765)	(26.95, 0.8035)	(26.73, 0.7984)	(27.47, 0.8050)
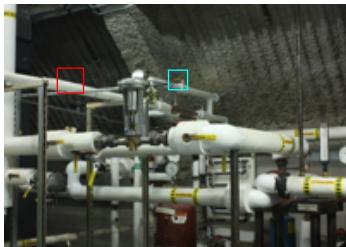
Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.
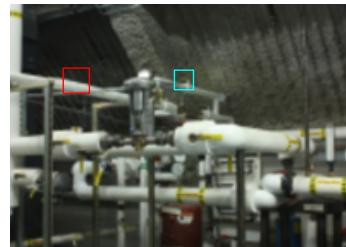
Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x4   Dataset: [Middlebury]   Image number: 3
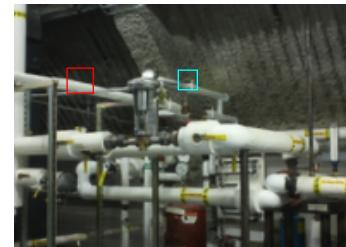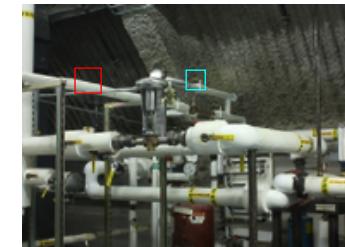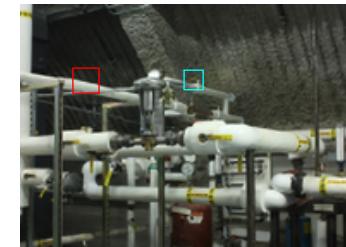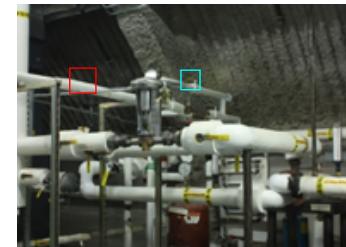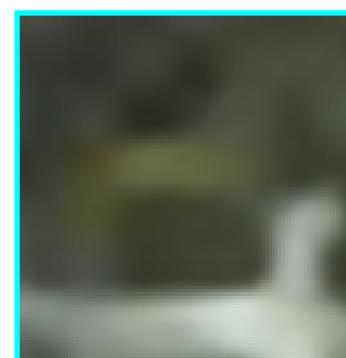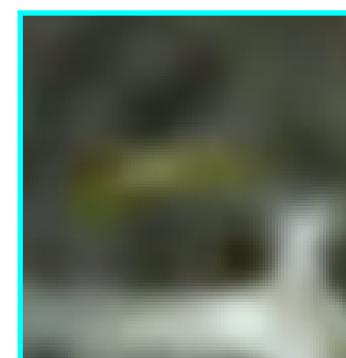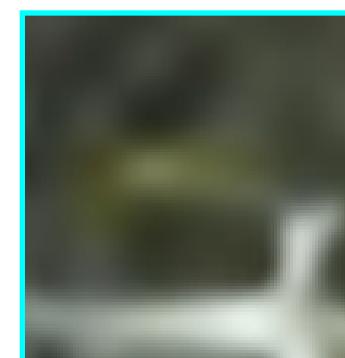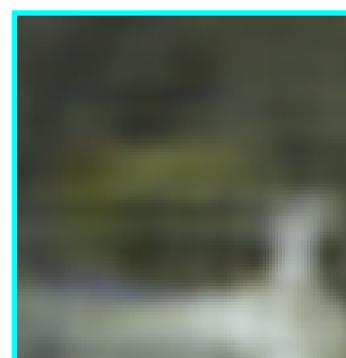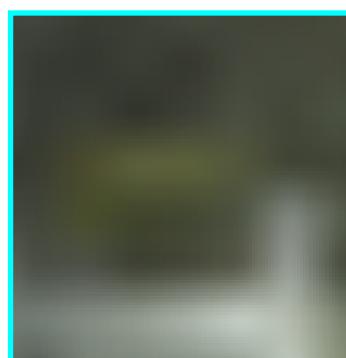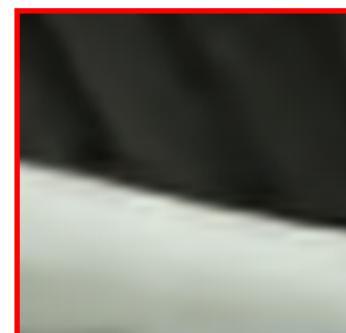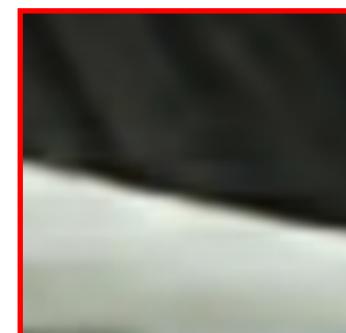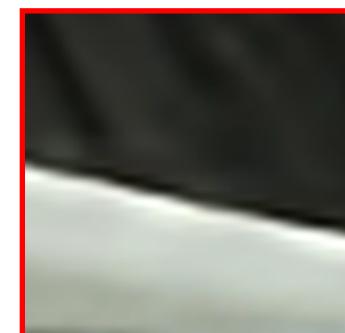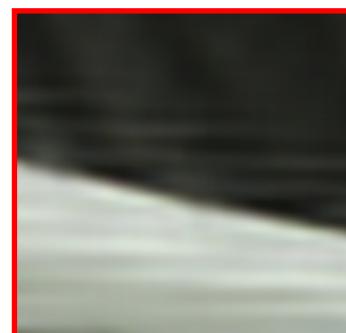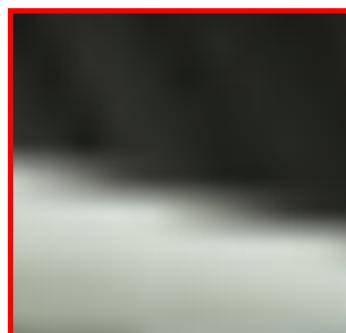
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(23.87, 0.6631)	(24.92, 0.7022)	(24.94, 0.7313)	(25.17, 0.7305)	(25.78, 0.7382)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.
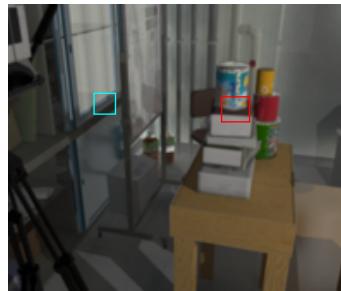
Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x2   Dataset: [Tsukuba]   Image number: 11
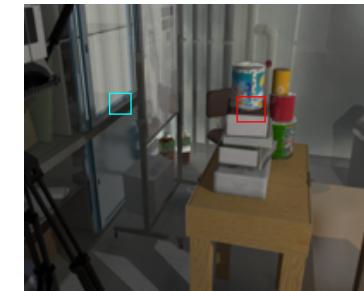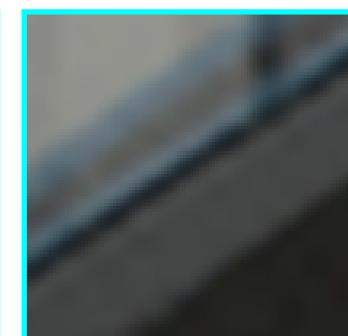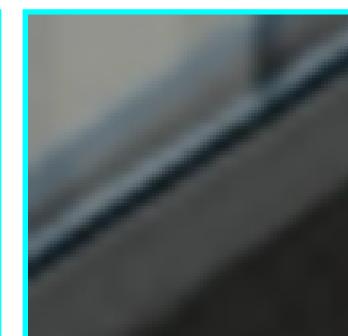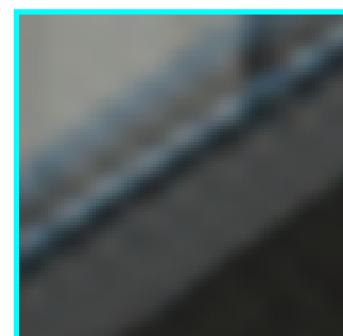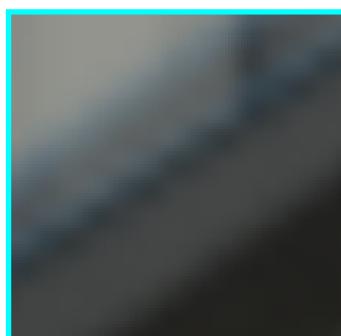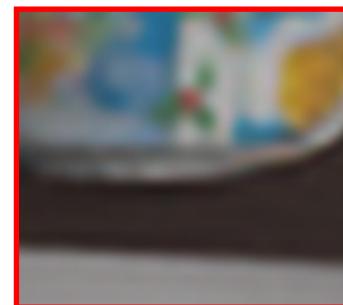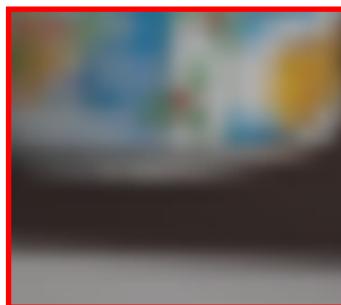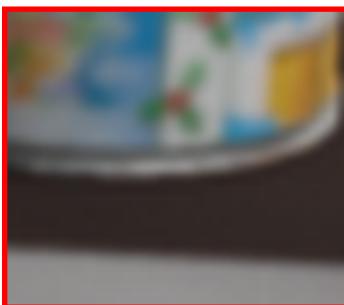
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(37.79, 0.9706)	(41.71, 0.9848)	(41.86, 0.9831)	(42.01, 0.9832)	(44.83, 0.9906)
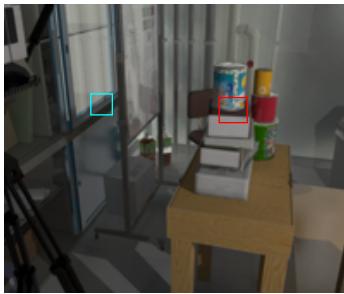
Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x3   Dataset: [Tsukuba]   Image number: 11
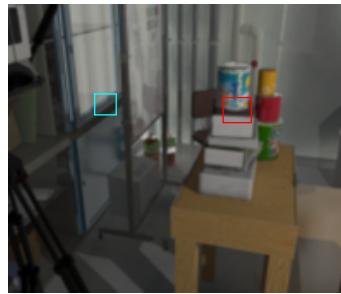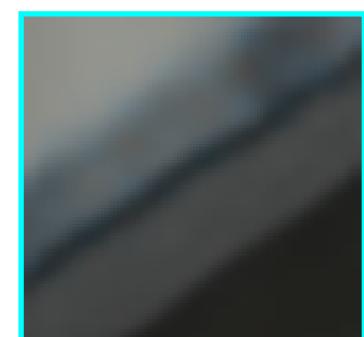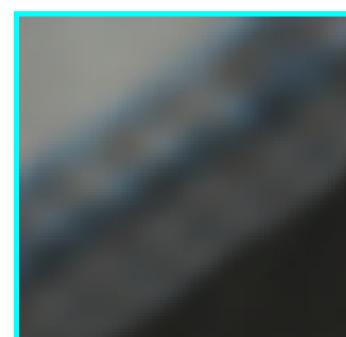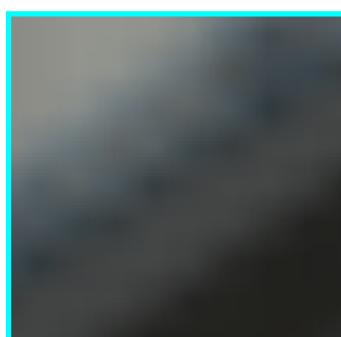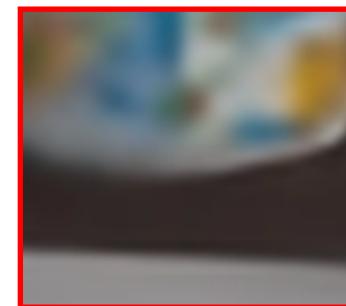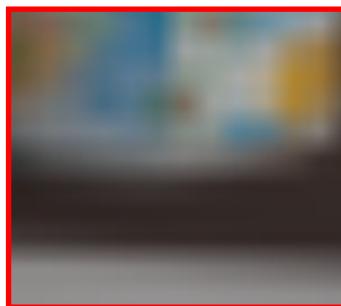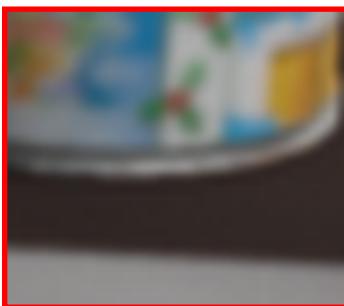
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(33.95, 0.9328)	(37.04, 0.9596)	(37.44, 0.9637)	(37.70, 0.9638)	(38.61, 0.9686)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
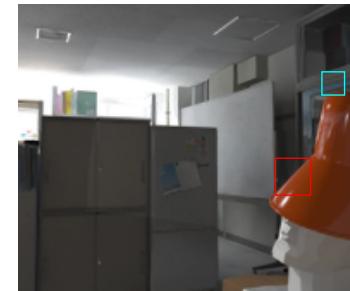## Scale factor: x4   Dataset: [Tsukuba]   Image number: 11
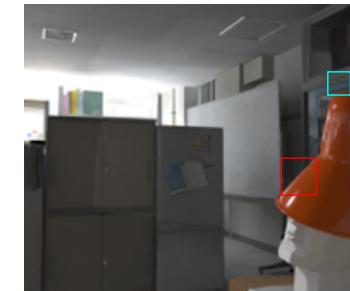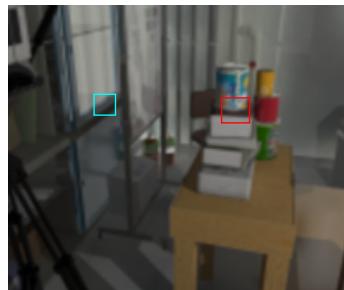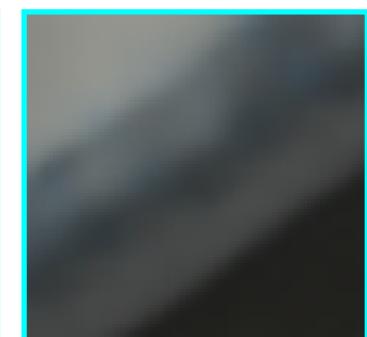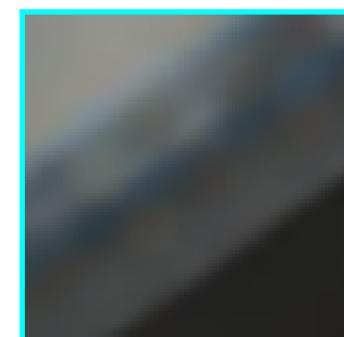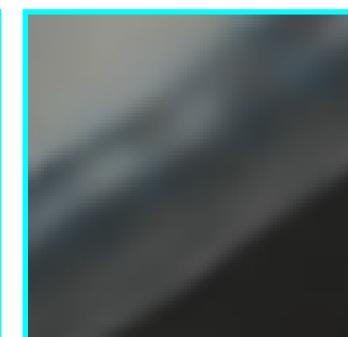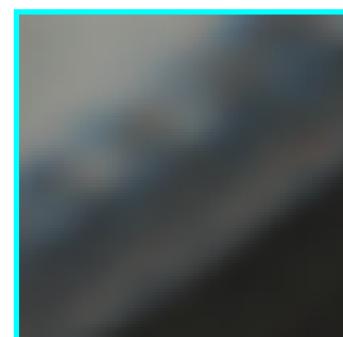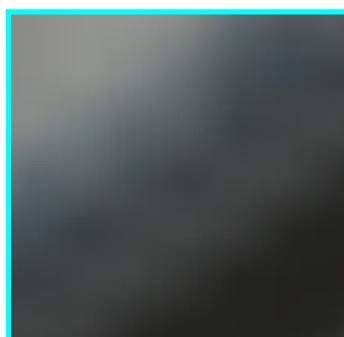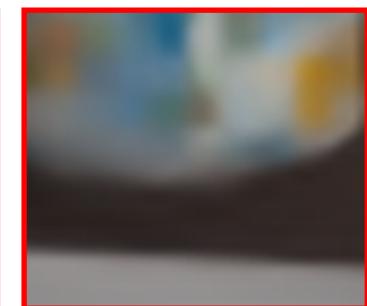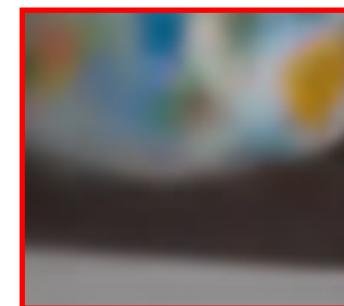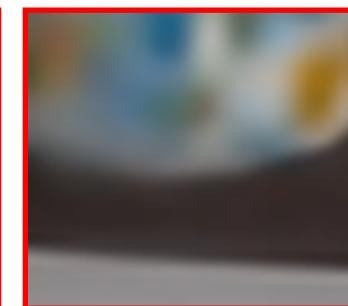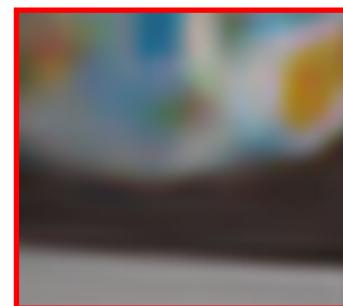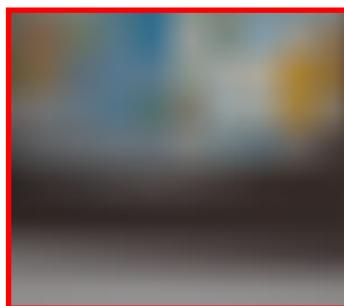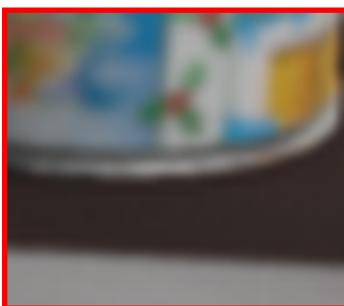

Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(31.97, 0.8967)	(34.10, 0.9303)	(34.11, 0.9333)	(34.58, 0.9362)	(35.09, 0.9393)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x2   Dataset: [KITTI 2012]   Image number: 5
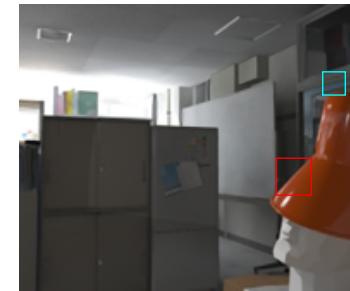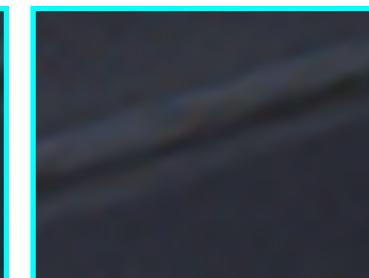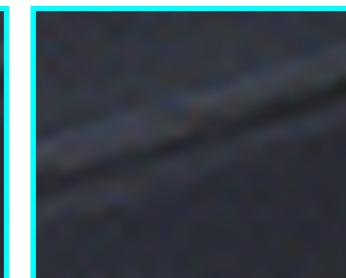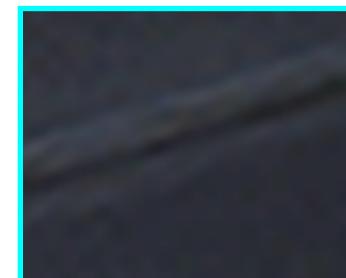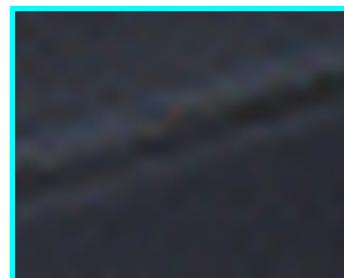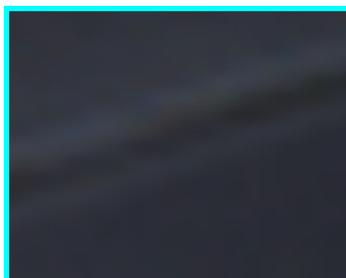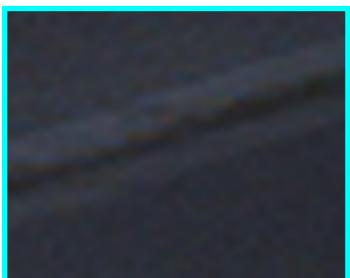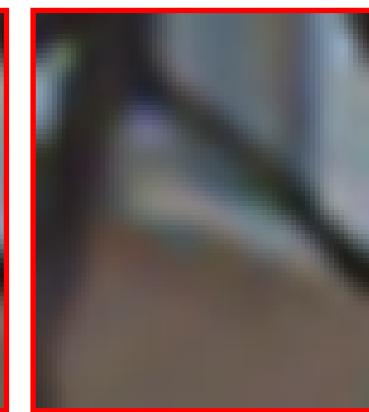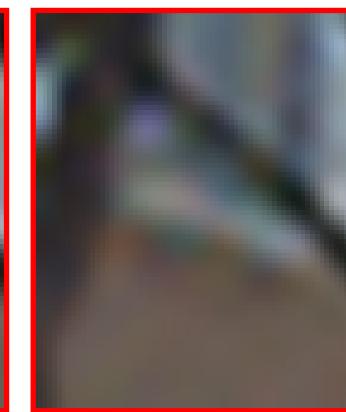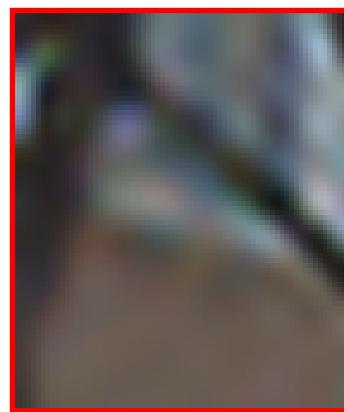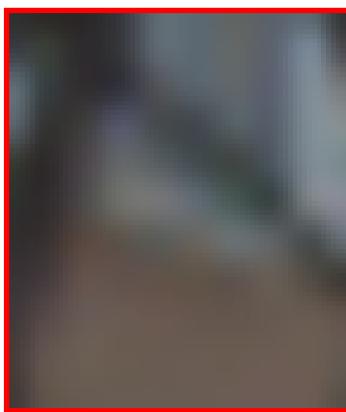
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(27.21, 0.8896)	(28.71, 0.9225)	(29.01, 0.9213)	(29.13, 0.9224)	(29.90, 0.9301)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x3   Dataset: [KITTI 2012]   Image number: 5
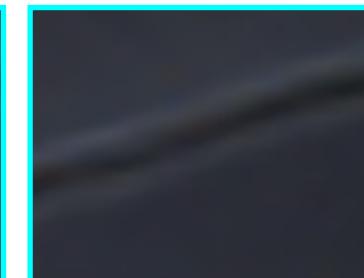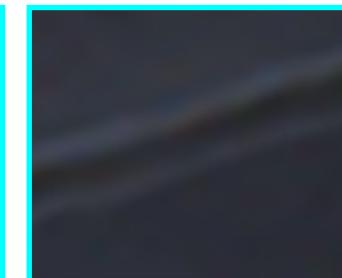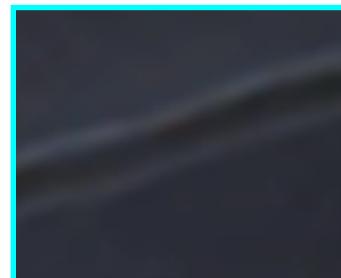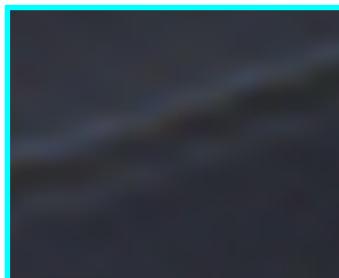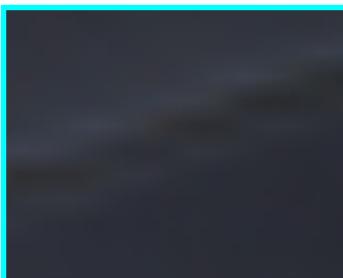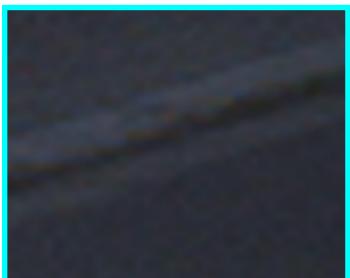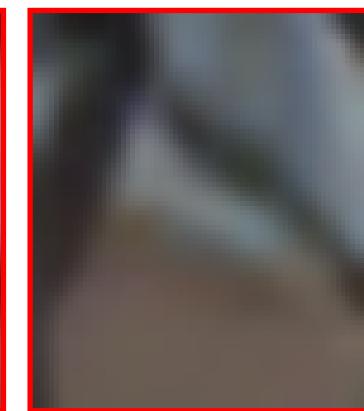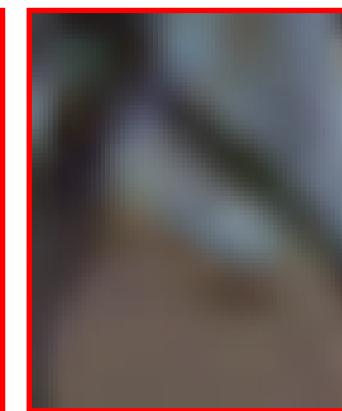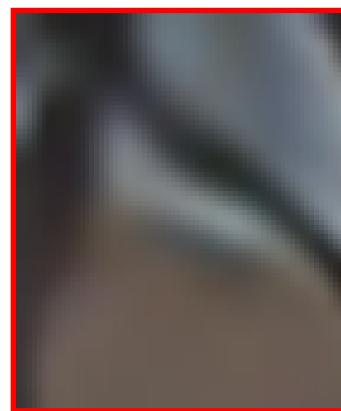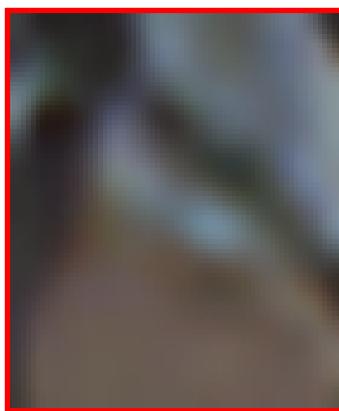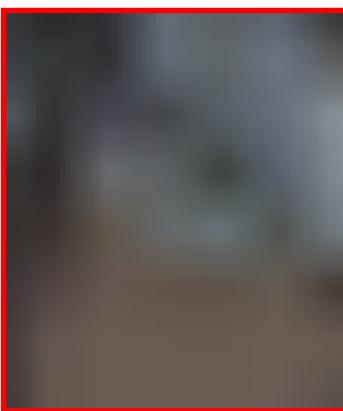
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(24.74, 0.8179)	(26.37, 0.8655)	(26.78, 0.8713)	(26.62, 0.8695)	(27.17, 0.8754)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Comparison with Single-Image Super-Resolution Algorithms (with Test Datasets)
Scale factor: x4   Dataset: [KITTI 2012]   Image number: 5
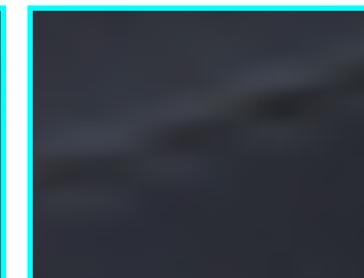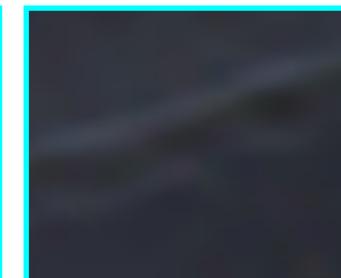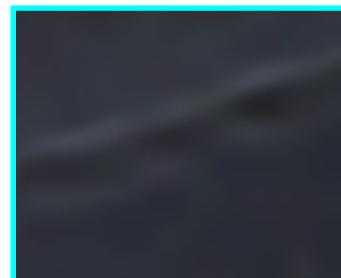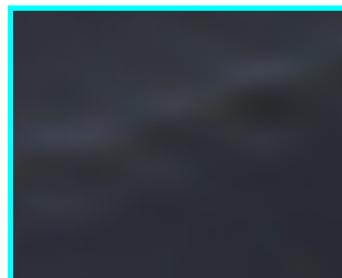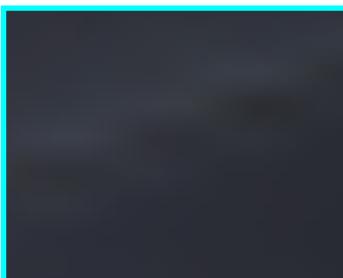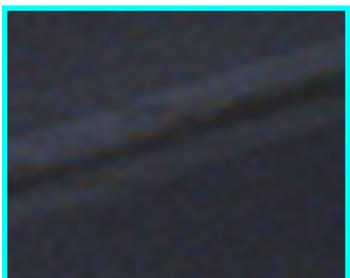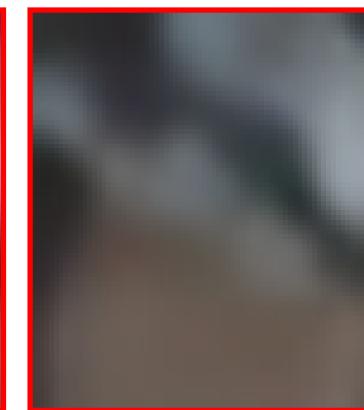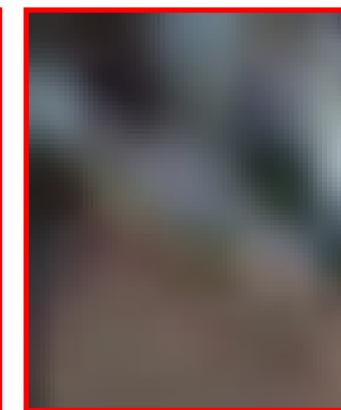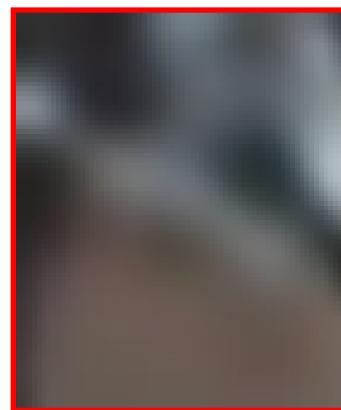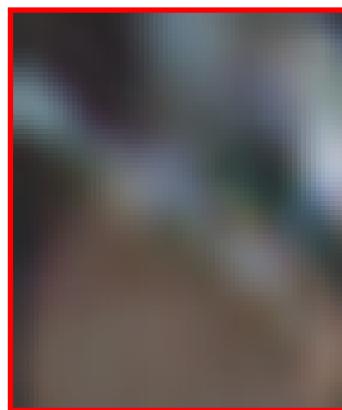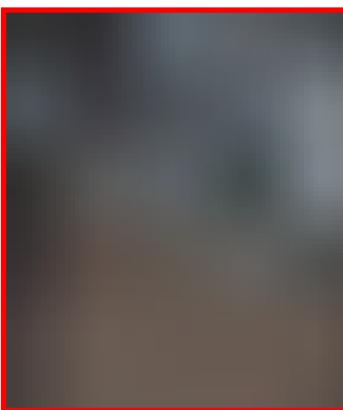
Ground Truth	Bicubic	SRCNN (2014)	VDSR (2016)	PSyCo (2016)	Our method
(PSNR, SSIM)	(23.36, 0.7587)	(24.57, 0.8081)	(24.67, 0.8153)	(24.78, 0.8144)	(25.36, 0.8186)

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Average PSNR / SSIM of Each Dataset

Dataset	Scale	Bicubic		SRCNN		VDSR		PSyCo		Ours	
		PSNR	SSIM	PSNR	SSIM	PSNR	SSIM	PSNR	SSIM	PSNR	SSIM
Middlebury (5 images)	×2	29.64	0.9228	31.48	0.9505	31.62	0.9543	32.03	0.9542	33.05	0.9545
	×3	27.20	0.8737	28.76	0.9136	29.30	0.9240	29.40	0.9231	29.59	0.8974
	×4	25.79	0.8344	27.11	0.8814	27.23	0.8916	27.58	0.8935	26.80	0.8495
Tsukuba (16 images)	×2	36.69	0.9833	40.05	0.9846	40.50	0.9840	41.08	0.9846	43.30	0.9968
	×3	32.98	0.9659	35.89	0.9611	36.70	0.9666	36.74	0.9657	37.32	0.9754
	×4	30.89	0.9453	33.10	0.9343	33.40	0.9463	33.83	0.9418	34.40	0.9541
KITTI 2012 (16 images)	×2	28.08	0.9200	29.27	0.9162	29.48	0.9137	29.82	0.9202	30.30	0.9452
	×3	25.72	0.8701	26.98	0.8533	27.24	0.8552	27.46	0.8637	27.96	0.8889
	×4	24.33	0.8345	25.34	0.8002	25.44	0.8043	25.73	0.8142	25.75	0.8382
KITTI 2015 (100 images)	×2	27.14	0.9176	28.50	0.9193	28.60	0.9156	28.75	0.9188	29.36	0.9456
	×3	24.74	0.8597	26.19	0.8530	26.37	0.8539	26.37	0.8548	26.96	0.8879
	×4	23.34	0.8130	24.44	0.7951	24.50	0.7999	24.64	0.7998	24.83	0.8338

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Middlebury Test Datasets (PSNR, SSIM)

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	30.01	0.8528	30.95	0.8834	30.90	0.8798	31.16	0.8854	32.12	0.8969
x3	28.29	0.7912	29.28	0.8157	29.70	0.8286	29.75	0.8326	30.28	0.8350
x4	27.14	0.7469	28.11	0.7664	28.26	0.7803	28.46	0.7854	28.96	0.7868

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.47	0.8528	27.02	0.8995	27.22	0.9045	27.39	0.9050	28.58	0.9160
x3	23.26	0.7584	24.46	0.8058	25.00	0.8357	24.92	0.8311	25.56	0.8387
x4	22.00	0.6821	22.99	0.7288	23.08	0.7618	23.31	0.7615	23.78	0.7691

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.23	0.8257	28.79	0.8768	28.73	0.8768	28.86	0.8775	29.88	0.8880
x3	25.09	0.7323	26.45	0.7765	26.95	0.8035	26.73	0.7984	27.47	0.8050
x4	23.87	0.6631	24.92	0.7022	24.94	0.7313	25.17	0.7305	25.78	0.7382

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	32.00	0.8781	34.14	0.9287	34.26	0.9278	34.36	0.9301	35.90	0.9429
x3	29.38	0.7843	30.52	0.8261	31.07	0.8452	31.18	0.8490	31.67	0.8535
x4	27.90	0.7102	28.84	0.7480	29.08	0.7663	29.30	0.7752	29.76	0.7730

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	32.57	0.9487	37.05	0.9685	36.39	0.9622	37.67	0.9667	39.96	0.9767
x3	29.14	0.9021	32.25	0.9274	33.06	0.9351	33.55	0.9405	34.41	0.9441
x4	27.28	0.8605	29.96	0.8832	30.22	0.8985	30.89	0.9061	31.04	0.9076

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Tsukuba Test Datasets (PSNR, SSIM)

1

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	41.31	0.9811	44.52	0.9880	44.76	0.9852	44.66	0.9833	48.28	0.9938
x3	37.57	0.9589	40.19	0.9720	41.35	0.9734	40.84	0.9714	41.75	0.9789
x4	35.39	0.9379	37.39	0.9535	37.73	0.9578	38.38	0.9571	39.03	0.9623

2

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	31.40	0.9525	35.13	0.9753	35.80	0.9770	36.88	0.9815	37.63	0.9851
x3	27.41	0.8901	30.66	0.9311	31.29	0.9451	31.82	0.9483	32.34	0.9533
x4	25.33	0.8331	27.37	0.8740	27.83	0.8913	28.28	0.8982	29.05	0.9055

3

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	34.00	0.9671	37.77	0.9824	38.53	0.9828	39.32	0.9839	41.25	0.9893
x3	30.18	0.9281	33.96	0.9596	35.18	0.9669	34.71	0.9649	36.04	0.9711
x4	28.18	0.8893	30.92	0.9279	31.43	0.9388	31.58	0.9377	32.77	0.9438

4

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	34.12	0.9699	38.12	0.9845	39.08	0.9848	39.83	0.9852	41.74	0.9917
x3	30.33	0.9338	34.16	0.9612	35.40	0.9704	35.39	0.9688	36.83	0.9764
x4	28.01	0.8978	31.10	0.9348	31.79	0.9465	31.77	0.9450	33.41	0.9555

5

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	33.48	0.9663	37.35	0.9821	38.32	0.9843	39.10	0.9850	40.58	0.9906
x3	29.65	0.9272	33.76	0.9584	34.62	0.9669	34.65	0.9656	35.67	0.9724
x4	27.46	0.8905	30.50	0.9265	30.83	0.9392	31.37	0.9385	32.40	0.9478

6

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	34.24	0.9705	38.16	0.9848	38.82	0.9846	40.03	0.9848	42.06	0.9920
x3	30.51	0.9352	33.74	0.9605	34.64	0.9666	34.56	0.9652	36.26	0.9741
x4	28.54	0.9043	31.16	0.9356	31.63	0.9469	31.67	0.9441	33.17	0.9551

7

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	36.76	0.9750	39.92	0.9843	40.08	0.9817	40.60	0.9819	42.49	0.9906
x3	33.05	0.9463	35.15	0.9635	35.55	0.9644	35.53	0.9642	36.12	0.9711
x4	31.27	0.9213	33.66	0.9430	33.73	0.9439	34.08	0.9447	34.45	0.9503

8

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	41.60	0.9801	44.54	0.9880	43.89	0.9848	44.31	0.9849	46.22	0.9907
x3	38.00	0.9562	40.06	0.9705	40.45	0.9713	40.12	0.9707	41.21	0.9762
x4	36.02	0.9333	37.58	0.9499	37.44	0.9495	37.87	0.9516	38.47	0.9554

9

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	35.78	0.9575	38.98	0.9757	39.47	0.9768	40.09	0.9777	42.08	0.9859
x3	32.01	0.9035	34.80	0.9396	35.51	0.9468	35.77	0.9477	36.07	0.9512
x4	29.82	0.8503	31.90	0.8947	32.11	0.9014	32.59	0.9042	33.04	0.9066

10

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	36.91	0.9595	39.75	0.9751	41.23	0.9806	41.22	0.9795	43.53	0.9876
x3	33.21	0.9090	35.88	0.9395	37.09	0.9549	37.02	0.9526	37.82	0.9597
x4	31.04	0.8582	33.04	0.8952	33.46	0.9089	33.75	0.9087	34.41	0.9144

11

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	37.79	0.9706	41.71	0.9848	41.86	0.9831	42.01	0.9832	44.83	0.9906
x3	33.95	0.9328	37.04	0.9596	37.44	0.9637	37.70	0.9638	38.61	0.9686
x4	31.97	0.8967	34.10	0.9303	34.11	0.9333	34.58	0.9362	35.09	0.9393

12

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	41.92	0.9824	45.20	0.9888	45.69	0.9865	45.52	0.9852	49.18	0.9942
x3	38.09	0.9615	41.40	0.9755	42.48	0.9766	42.50	0.9758	43.71	0.9825
x4	35.76	0.9409	38.32	0.9580	38.97	0.9625	39.72	0.9634	40.52	0.9676

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	33.96	0.9684	37.57	0.9829	37.93	0.9828	39.00	0.9843	40.12	0.9885
x3	30.52	0.9338	33.58	0.9598	34.91	0.9682	34.73	0.9674	35.89	0.9711
x4	28.56	0.9017	30.82	0.9316	31.57	0.9451	31.75	0.9433	32.73	0.9500

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	41.01	0.9779	43.88	0.9866	43.13	0.9829	43.66	0.9835	45.60	0.9914
x3	37.57	0.9527	39.69	0.9683	40.05	0.9692	40.33	0.9697	41.21	0.9746
x4	35.65	0.9283	37.22	0.9466	37.05	0.9469	37.50	0.9480	38.05	0.9524

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	36.19	0.9614	39.40	0.9774	40.43	0.9801	40.90	0.9803	42.66	0.9867
x3	32.25	0.9109	35.28	0.9433	36.39	0.9530	36.42	0.9520	37.11	0.9581
x4	30.18	0.8648	32.42	0.9042	32.78	0.9134	33.33	0.9159	33.66	0.9180

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	36.28	0.9646	39.78	0.9799	39.87	0.9769	40.65	0.9792	42.26	0.9867
x3	32.51	0.9236	35.48	0.9507	35.98	0.9535	36.29	0.9546	36.77	0.9600
x4	30.44	0.8851	32.59	0.9175	32.57	0.9187	33.13	0.9218	33.73	0.9250

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

KITTI 2012 Test Datasets (PSNR, SSIM)

1

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.75	0.8967	28.44	0.9296	28.72	0.9300	28.86	0.9306	29.65	0.9379
x3	24.19	0.8222	25.84	0.8706	26.24	0.8789	26.09	0.8757	26.61	0.8810
x4	22.71	0.7599	23.99	0.8118	24.16	0.8224	24.19	0.8196	24.69	0.8225

2

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.50	0.8771	29.34	0.9136	29.67	0.9126	29.72	0.9140	30.71	0.9244
x3	24.94	0.7961	26.59	0.8431	27.09	0.8505	26.86	0.8472	27.62	0.8552
x4	23.47	0.7302	24.64	0.7797	24.75	0.7879	24.89	0.7851	25.42	0.7916

3

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.94	0.8845	30.63	0.9168	30.92	0.9156	31.06	0.9165	32.08	0.9267
x3	26.43	0.8165	28.24	0.8591	28.69	0.8624	28.55	0.8618	29.14	0.8678
x4	24.84	0.7603	26.36	0.8061	26.46	0.8109	26.67	0.8112	27.19	0.8162

4

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.79	0.8676	29.49	0.9063	29.66	0.9033	29.73	0.9053	30.52	0.9130
x3	25.40	0.7882	27.07	0.8373	27.39	0.8410	27.19	0.8389	27.80	0.8443
x4	24.12	0.7246	25.45	0.7762	25.61	0.7815	25.59	0.7793	25.99	0.7828

5

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.21	0.8896	28.71	0.9225	29.01	0.9213	29.13	0.9224	29.90	0.9301
x3	24.74	0.8179	26.37	0.8655	26.78	0.8713	26.62	0.8695	27.17	0.8754
x4	23.36	0.7587	24.57	0.8081	24.67	0.8153	24.78	0.8144	25.36	0.8186

6

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.91	0.8765	31.42	0.9099	31.56	0.9051	31.61	0.9066	32.44	0.9142
x3	27.62	0.8110	29.29	0.8490	29.50	0.8485	29.37	0.8487	29.99	0.8533
x4	26.32	0.7606	27.77	0.7974	27.79	0.7993	27.86	0.7987	28.43	0.8017

7

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.72	0.8321	28.73	0.8810	28.78	0.8759	28.85	0.8797	29.40	0.8859
x3	25.64	0.7359	26.65	0.7919	26.76	0.7937	26.79	0.7955	27.10	0.7957
x4	24.43	0.6634	25.16	0.7187	25.19	0.7221	25.30	0.7241	25.71	0.7235

8

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.88	0.8607	30.20	0.9001	30.37	0.8947	30.49	0.8986	31.20	0.9044
x3	26.73	0.7856	28.25	0.8295	28.49	0.8304	28.43	0.8313	28.89	0.8346
x4	25.35	0.7281	26.68	0.7720	26.89	0.7756	26.90	0.7750	27.27	0.7763

9

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.48	0.8313	26.58	0.8857	26.78	0.8828	26.89	0.8866	27.47	0.8928
x3	23.33	0.7258	24.39	0.7921	24.58	0.7954	24.51	0.7944	24.86	0.7965
x4	22.13	0.6455	22.93	0.7127	22.95	0.7164	23.01	0.7151	23.48	0.7144

10

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.64	0.8377	28.67	0.8849	28.90	0.8815	28.91	0.8839	29.54	0.8901
x3	25.49	0.7429	26.65	0.7991	26.82	0.7999	26.77	0.8003	27.23	0.8022
x4	24.27	0.6708	25.19	0.7282	25.25	0.7311	25.31	0.7313	25.87	0.7323

11

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.18	0.8254	26.22	0.8833	26.34	0.8798	26.43	0.8827	26.97	0.8872
x3	23.07	0.7120	23.94	0.7824	24.04	0.7851	24.07	0.7848	24.41	0.7842
x4	21.88	0.6227	22.41	0.6944	22.39	0.6984	22.49	0.6972	22.93	0.6943

12

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.61	0.8749	30.32	0.9113	30.50	0.9074	30.56	0.9090	31.36	0.9167
x3	26.14	0.7970	27.86	0.8431	28.20	0.8450	28.15	0.8445	28.69	0.8509
x4	24.77	0.7382	26.24	0.7847	26.47	0.7903	26.48	0.7874	26.96	0.7915

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.94	0.8056	29.82	0.8594	29.89	0.8519	29.89	0.8579	30.48	0.8621
x3	26.94	0.6981	27.79	0.7595	27.86	0.7556	27.88	0.7622	28.23	0.7572
x4	25.78	0.6173	26.37	0.6779	26.48	0.6815	26.45	0.6813	26.95	0.6775

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.31	0.9024	29.83	0.9301	30.21	0.9288	30.19	0.9298	29.20	0.9318
x3	25.87	0.8353	27.52	0.8776	27.85	0.8824	27.76	0.8812	28.36	0.8870
x4	24.50	0.7817	25.84	0.8273	25.96	0.8340	26.05	0.8317	26.55	0.8372

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.73	0.8782	30.52	0.9132	30.65	0.9090	30.72	0.9102	31.60	0.9196
x3	26.20	0.8016	28.08	0.8478	28.47	0.8498	28.35	0.8490	28.97	0.8537
x4	24.78	0.7434	26.37	0.7900	26.60	0.7955	26.60	0.7927	27.11	0.7970

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.79	0.8601	27.79	0.9014	28.00	0.8974	28.05	0.9006	28.52	0.9063
x3	24.56	0.7718	25.45	0.8208	25.66	0.8220	25.65	0.8233	25.91	0.8239
x4	23.40	0.7079	23.97	0.7555	24.06	0.7589	24.16	0.7586	24.54	0.7573

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

KITTI 2015 Test Datasets (PSNR, SSIM)

1

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.89	0.8950	30.99	0.9250	31.10	0.9179	31.22	0.9221	31.74	0.9273
x3	27.63	0.8314	28.91	0.8656	29.10	0.8634	29.14	0.8662	29.50	0.8676
x4	26.29	0.7850	27.27	0.8147	27.43	0.8174	27.56	0.8196	27.95	0.8199

2

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.87	0.8508	28.01	0.8996	28.14	0.8904	28.27	0.8976	28.80	0.9033
x3	24.70	0.7575	25.67	0.8089	26.11	0.8144	26.02	0.8137	26.40	0.8167
x4	23.35	0.6855	23.90	0.7315	24.33	0.7410	24.43	0.7404	24.84	0.7414

3

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.04	0.9249	30.50	0.9454	30.56	0.9375	30.78	0.9437	31.41	0.9500
x3	26.46	0.8717	27.95	0.8997	28.13	0.8972	28.11	0.9011	28.50	0.9032
x4	25.07	0.8317	26.14	0.8582	26.09	0.8574	26.30	0.8620	26.69	0.8641

4

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.02	0.8443	27.36	0.8939	27.57	0.8887	27.63	0.8947	28.32	0.8995
x3	23.61	0.7397	25.12	0.8005	25.36	0.8046	25.28	0.8056	25.76	0.8074
x4	22.21	0.6610	23.31	0.7203	23.42	0.7293	23.57	0.7316	24.08	0.7314

5

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.44	0.8782	29.86	0.9158	30.11	0.9092	30.12	0.9129	30.88	0.9205
x3	26.02	0.8033	27.55	0.8467	27.79	0.8460	27.79	0.8479	28.38	0.8516
x4	24.58	0.7457	25.80	0.7877	25.94	0.7929	25.98	0.7915	26.51	0.7944

6

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.51	0.8717	26.88	0.9164	26.92	0.9071	27.10	0.9140	27.49	0.9187
x3	23.14	0.7811	24.47	0.8412	24.56	0.8398	24.57	0.8397	24.88	0.8424
x4	21.86	0.7101	22.74	0.7678	22.73	0.7701	22.86	0.7684	23.35	0.7708

7

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.32	0.8478	26.74	0.8991	26.95	0.8962	27.04	0.9010	27.76	0.9051
x3	22.88	0.7395	24.41	0.8054	24.67	0.8111	24.58	0.8115	25.09	0.8132
x4	21.44	0.6523	22.59	0.7213	22.69	0.7300	22.81	0.7317	23.23	0.7324

8

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	23.30	0.7789	24.24	0.8486	24.41	0.8408	24.52	0.8533	24.90	0.8535
x3	21.23	0.6402	21.96	0.7132	22.10	0.7135	22.15	0.7217	22.49	0.7157
x4	20.13	0.5442	20.53	0.6114	20.62	0.6182	20.72	0.6216	21.08	0.6125

9

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.43	0.8880	29.02	0.9254	29.03	0.9193	29.20	0.9229	29.73	0.9291
x3	25.05	0.8105	26.71	0.8604	26.84	0.8616	26.77	0.8601	27.15	0.8634
x4	23.66	0.7485	24.90	0.7970	24.97	0.8032	25.06	0.8004	25.56	0.8032

10

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.98	0.8792	28.33	0.9201	28.42	0.9144	28.51	0.9172	29.02	0.9225
x3	24.59	0.7920	26.03	0.8465	26.17	0.8470	26.12	0.8466	26.51	0.8477
x4	23.10	0.7194	24.22	0.7759	24.26	0.7786	24.32	0.7781	24.72	0.7792

11

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.80	0.8863	27.31	0.9218	27.44	0.9180	27.55	0.9213	28.36	0.9295
x3	23.37	0.8045	24.98	0.8579	25.17	0.8612	25.03	0.8611	25.57	0.8663
x4	21.93	0.7356	23.11	0.7940	23.03	0.7985	23.22	0.7994	23.67	0.8043

12

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.36	0.8620	27.83	0.9057	27.91	0.8997	28.04	0.9045	28.76	0.9120
x3	23.91	0.7664	25.44	0.8239	25.56	0.8241	25.57	0.8269	25.99	0.8295
x4	22.52	0.6929	23.68	0.7526	23.70	0.7577	23.84	0.7590	24.27	0.7589

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.75	0.8895	29.25	0.9201	29.48	0.9175	29.63	0.9205	30.30	0.9282
x3	25.16	0.8151	26.85	0.8577	27.28	0.8631	27.15	0.8630	27.60	0.8669
x4	23.60	0.7552	24.89	0.7969	25.14	0.8081	25.17	0.8060	25.60	0.8098

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.82	0.8647	27.02	0.9083	27.20	0.9039	27.22	0.9074	27.87	0.9148
x3	23.46	0.7707	24.85	0.8294	25.02	0.8320	25.04	0.8336	25.53	0.8374
x4	22.09	0.6957	23.10	0.7568	23.17	0.7624	23.25	0.7620	23.68	0.7643

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.57	0.8629	28.95	0.9071	29.06	0.9011	29.07	0.9060	29.77	0.9142
x3	25.16	0.7693	26.44	0.8222	26.73	0.8283	26.70	0.8268	27.19	0.8310
x4	23.73	0.6963	24.70	0.7439	24.95	0.7548	24.93	0.7517	25.45	0.7554

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.53	0.8957	27.00	0.9304	27.15	0.9284	27.33	0.9306	27.89	0.9374
x3	23.03	0.8119	24.66	0.8676	24.92	0.8736	24.83	0.8709	25.36	0.8751
x4	21.60	0.7409	22.86	0.8030	22.89	0.8099	23.03	0.8082	23.44	0.8124

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.11	0.8647	29.36	0.9047	29.52	0.9010	29.63	0.9049	30.41	0.9123
x3	25.69	0.7772	27.15	0.8246	27.36	0.8290	27.33	0.8290	27.68	0.8321
x4	24.29	0.7118	25.40	0.7555	25.71	0.7666	25.63	0.7625	26.13	0.7654

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.17	0.8573	29.57	0.9009	29.66	0.8936	29.79	0.8993	30.36	0.9044
x3	25.88	0.7673	27.29	0.8181	27.41	0.8167	27.38	0.8196	27.67	0.8205
x4	24.48	0.6995	25.67	0.7468	25.67	0.7496	25.76	0.7515	26.20	0.7519

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.31	0.8930	29.26	0.9237	29.41	0.9188	29.49	0.9227	29.98	0.9282
x3	26.12	0.8225	27.12	0.8610	27.23	0.8614	27.30	0.8643	27.63	0.8644
x4	24.81	0.7661	25.51	0.8032	25.53	0.8057	25.68	0.8083	26.11	0.8067

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.03	0.8594	28.52	0.9037	28.40	0.8927	28.57	0.9002	29.23	0.9057
x3	24.54	0.7671	26.11	0.8220	26.17	0.8168	26.26	0.8236	26.59	0.8201
x4	23.04	0.6948	24.11	0.7489	24.13	0.7480	24.27	0.7520	24.70	0.7510

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.77	0.8903	27.58	0.9251	27.58	0.9213	27.85	0.9256	28.74	0.9343
x3	23.14	0.8082	25.04	0.8603	25.39	0.8680	25.19	0.8655	25.80	0.8730
x4	21.53	0.7356	22.90	0.7907	23.06	0.8008	23.05	0.7982	23.58	0.8030

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.23	0.8995	28.10	0.9307	28.04	0.9272	28.28	0.9307	29.19	0.9409
x3	23.53	0.8217	25.45	0.8715	25.66	0.8755	25.62	0.8759	26.16	0.8823
x4	21.99	0.7561	23.51	0.8105	23.49	0.8173	23.63	0.8161	24.08	0.8213

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.14	0.8713	27.78	0.9115	27.84	0.9060	27.97	0.9103	28.60	0.9172
x3	23.67	0.7833	25.30	0.8374	25.58	0.8397	25.43	0.8411	25.94	0.8446
x4	22.13	0.7115	23.38	0.7669	23.46	0.7743	23.53	0.7742	24.05	0.7770

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	24.51	0.8698	25.75	0.9136	25.84	0.9054	26.04	0.9130	26.48	0.9186
x3	22.13	0.7753	23.50	0.8361	23.58	0.8362	23.61	0.8378	23.95	0.8402
x4	20.86	0.7024	21.81	0.7627	21.79	0.7648	21.93	0.7670	22.34	0.7676

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	23.40	0.7749	24.52	0.8468	24.58	0.8387	24.74	0.8502	25.18	0.8502
x3	21.22	0.6298	22.21	0.7127	22.27	0.7113	22.30	0.7172	22.66	0.7133
x4	20.02	0.5242	20.65	0.6015	20.59	0.6049	20.76	0.6087	21.17	0.6031

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.89	0.8892	29.38	0.9193	29.62	0.9165	29.81	0.9198	30.47	0.9270
x3	25.26	0.8146	26.91	0.8558	27.34	0.8610	27.29	0.8612	27.70	0.8642
x4	23.65	0.7551	24.96	0.7947	25.23	0.8065	25.28	0.8045	25.69	0.8087

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.68	0.9151	29.37	0.9416	29.58	0.9386	29.79	0.9417	30.55	0.9491
x3	25.10	0.8559	27.09	0.8943	27.37	0.8988	27.31	0.8989	27.98	0.9046
x4	23.57	0.8062	25.31	0.8510	25.44	0.8571	25.50	0.8562	26.09	0.8618

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.52	0.8547	28.89	0.9005	28.94	0.8933	29.06	0.8987	29.68	0.9035
x3	25.22	0.7611	26.57	0.8155	26.72	0.8158	26.74	0.8189	27.15	0.8210
x4	23.90	0.6905	24.85	0.7432	24.93	0.7482	25.08	0.7499	25.45	0.7511

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.12	0.8512	30.30	0.8949	30.54	0.8880	30.52	0.8924	31.23	0.9001
x3	26.65	0.7595	28.00	0.8098	28.34	0.8100	28.27	0.8120	28.68	0.8135
x4	25.25	0.6911	26.11	0.7368	26.32	0.7427	26.44	0.7423	27.05	0.7462

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.46	0.8614	27.90	0.9074	27.95	0.8978	28.00	0.9046	28.78	0.9121
x3	24.14	0.7644	25.52	0.8250	25.67	0.8223	25.56	0.8248	25.97	0.8255
x4	22.83	0.6892	23.77	0.7462	23.86	0.7486	23.93	0.7502	24.35	0.7513

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	24.41	0.8566	25.54	0.9026	25.58	0.8961	25.74	0.9015	26.26	0.9083
x3	22.13	0.7579	23.22	0.8165	23.31	0.8173	23.33	0.8195	23.68	0.8216
x4	20.83	0.6809	21.65	0.7435	21.67	0.7481	21.80	0.7500	22.19	0.7488

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.88	0.8802	31.22	0.9151	31.36	0.9082	31.49	0.9120	32.11	0.9178
x3	27.51	0.8048	29.00	0.8470	29.26	0.8455	29.37	0.8484	29.71	0.8508
x4	26.06	0.7476	27.33	0.7888	27.52	0.7922	27.70	0.7931	28.08	0.7952

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.00	0.8517	27.37	0.9027	27.41	0.8978	27.54	0.9023	28.16	0.9078
x3	23.61	0.7477	25.02	0.8149	25.18	0.8200	25.08	0.8178	25.62	0.8209
x4	22.31	0.6639	23.40	0.7294	23.41	0.7383	23.50	0.7357	23.90	0.7381

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.26	0.8990	30.54	0.9301	30.72	0.9233	30.81	0.9265	31.50	0.9324
x3	26.88	0.8368	28.38	0.8733	28.62	0.8704	28.58	0.8719	29.00	0.8759
x4	25.41	0.7892	26.65	0.8236	26.79	0.8245	26.94	0.8261	27.53	0.8302

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.25	0.8943	30.81	0.9253	30.93	0.9204	31.10	0.9242	31.75	0.9313
x3	26.68	0.8222	28.49	0.8627	28.84	0.8667	28.86	0.8675	29.36	0.8715
x4	25.31	0.7662	26.74	0.8068	26.86	0.8128	27.15	0.8150	27.83	0.8200

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.93	0.8964	29.37	0.9287	29.57	0.9224	29.65	0.9267	30.31	0.9335
x3	25.38	0.8234	26.86	0.8669	27.18	0.8673	27.06	0.8678	27.51	0.8706
x4	24.04	0.7673	25.20	0.8101	25.14	0.8123	25.39	0.8147	25.98	0.8171

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.29	0.8375	27.60	0.8862	27.69	0.8748	27.88	0.8836	28.42	0.8906
x3	24.03	0.7380	25.25	0.7918	25.42	0.7892	25.49	0.7947	25.87	0.7949
x4	22.60	0.6597	23.49	0.7062	23.63	0.7124	23.79	0.7152	24.12	0.7129

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.10	0.8380	27.42	0.8870	27.57	0.8758	27.68	0.8846	28.31	0.8914
x3	23.81	0.7377	24.99	0.7922	25.22	0.7894	25.24	0.7949	25.58	0.7942
x4	22.47	0.6620	23.29	0.7097	23.41	0.7150	23.55	0.7173	23.86	0.7160

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.47	0.8481	26.94	0.9020	26.96	0.8949	27.07	0.8997	27.74	0.9049
x3	23.11	0.7409	24.60	0.8110	24.71	0.8114	24.62	0.8109	25.12	0.8130
x4	21.82	0.6594	22.91	0.7287	22.89	0.7336	23.01	0.7315	23.51	0.7342

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.85	0.8925	29.35	0.9249	29.51	0.9219	29.58	0.9240	30.38	0.9333
x3	25.40	0.8178	26.98	0.8625	27.33	0.8669	27.12	0.8647	27.65	0.8697
x4	23.97	0.7566	25.27	0.8005	25.37	0.8092	25.41	0.8073	25.93	0.8104

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.53	0.8925	29.03	0.9236	29.25	0.9216	29.36	0.9237	30.03	0.9316
x3	24.94	0.8149	26.61	0.8614	26.93	0.8694	26.93	0.8686	27.42	0.8737
x4	23.33	0.7498	24.73	0.8019	24.78	0.8110	24.92	0.8102	25.48	0.8149

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.61	0.8756	26.81	0.9151	27.00	0.9116	27.12	0.9146	27.63	0.9225
x3	23.23	0.7864	24.48	0.8405	24.71	0.8453	24.69	0.8441	25.16	0.8484
x4	21.86	0.7144	22.70	0.7704	22.85	0.7795	22.95	0.7768	23.44	0.7775

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	23.51	0.8214	24.55	0.8777	24.66	0.8702	24.77	0.8787	25.15	0.8812
x3	21.35	0.7062	22.20	0.7708	22.31	0.7694	22.32	0.7742	22.62	0.7721
x4	20.18	0.6210	20.65	0.6822	20.64	0.6842	20.80	0.6876	21.22	0.6822

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	30.89	0.8226	31.79	0.8634	32.04	0.8557	32.06	0.8671	32.85	0.8726
x3	28.85	0.7342	29.83	0.7664	30.00	0.7603	30.08	0.7742	30.62	0.7708
x4	27.72	0.6821	28.48	0.7064	28.67	0.7069	28.84	0.7133	29.34	0.7097

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.03	0.8380	27.36	0.8877	27.50	0.8764	27.62	0.8850	28.25	0.8928
x3	23.72	0.7370	24.93	0.7925	25.16	0.7902	25.18	0.7950	25.47	0.7953
x4	22.39	0.6622	23.28	0.7118	23.35	0.7168	23.50	0.7178	23.90	0.7185

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.43	0.8770	27.80	0.9144	27.93	0.9087	28.04	0.9138	28.65	0.9212
x3	24.04	0.7934	25.50	0.8441	25.69	0.8461	25.67	0.8472	26.05	0.8503
x4	22.61	0.7259	23.85	0.7792	23.80	0.7828	23.95	0.7836	24.46	0.7881

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.52	0.9225	30.25	0.9455	30.29	0.9404	30.61	0.9435	31.39	0.9532
x3	25.92	0.8706	27.87	0.9029	28.22	0.9048	28.20	0.9058	28.78	0.9131
x4	24.23	0.8253	26.04	0.8627	26.09	0.8668	26.24	0.8670	26.85	0.8736

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.32	0.8480	28.48	0.8957	28.56	0.8882	28.64	0.8939	29.26	0.8990
x3	25.07	0.7504	26.24	0.8071	26.31	0.8061	26.40	0.8098	26.65	0.8080
x4	23.74	0.6748	24.59	0.7290	24.59	0.7335	24.73	0.7351	25.14	0.7336

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.86	0.8319	27.15	0.8839	27.28	0.8725	27.43	0.8819	28.07	0.8876
x3	23.57	0.7270	24.76	0.7850	25.05	0.7845	25.04	0.7887	25.41	0.7883
x4	22.19	0.6467	23.02	0.6977	23.19	0.7049	23.31	0.7061	23.63	0.7057

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.38	0.8856	27.15	0.9212	27.17	0.9184	27.38	0.9224	28.23	0.9318
x3	22.84	0.8020	24.68	0.8548	25.06	0.8637	24.85	0.8618	25.44	0.8665
x4	21.31	0.7291	22.74	0.7856	22.87	0.7977	22.89	0.7955	23.33	0.7988

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.99	0.8790	31.29	0.9141	31.46	0.9075	31.58	0.9110	32.16	0.9175
x3	27.59	0.8030	29.06	0.8458	29.33	0.8441	29.41	0.8468	29.78	0.8490
x4	26.14	0.7452	27.43	0.7866	27.61	0.7892	27.77	0.7907	28.21	0.7922

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.92	0.8617	30.43	0.9045	30.53	0.8960	30.62	0.9015	31.29	0.9069
x3	26.61	0.7815	28.35	0.8284	28.76	0.8274	28.55	0.8294	29.15	0.8314
x4	25.07	0.7192	26.56	0.7637	26.91	0.7680	26.71	0.7675	27.35	0.7705

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.24	0.8495	26.56	0.9037	26.49	0.8943	26.68	0.9011	27.29	0.9049
x3	22.96	0.7392	24.17	0.8076	24.20	0.8081	24.26	0.8085	24.68	0.8095
x4	21.63	0.6489	22.41	0.7150	22.39	0.7195	22.51	0.7185	23.05	0.7212

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.02	0.8438	30.00	0.8928	30.20	0.8874	30.21	0.8920	30.79	0.8948
x3	26.81	0.7463	27.89	0.8034	28.06	0.8035	28.05	0.8058	28.38	0.8047
x4	25.61	0.6738	26.40	0.7289	26.49	0.7340	26.57	0.7335	27.01	0.7315

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Image 55:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	30.51	0.8859	31.71	0.9185	31.93	0.9129	32.06	0.9168	32.69	0.9228
x3	28.14	0.8144	29.71	0.8567	29.96	0.8557	30.03	0.8577	30.33	0.8584
x4	26.69	0.7579	28.02	0.7984	28.17	0.8011	28.33	0.8021	28.76	0.8028

Image 56:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	23.39	0.7755	24.29	0.8459	24.46	0.8374	24.56	0.8506	24.94	0.8506
x3	21.33	0.6368	22.05	0.7097	22.19	0.7092	22.24	0.7178	22.53	0.7123
x4	20.23	0.5386	20.62	0.6055	20.71	0.6107	20.80	0.6156	21.16	0.6050

Image 57:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.44	0.8615	27.89	0.9049	27.88	0.8982	28.08	0.9036	28.79	0.9108
x3	24.03	0.7673	25.58	0.8246	25.70	0.8241	25.70	0.8274	26.09	0.8295
x4	22.58	0.6911	23.73	0.7502	23.73	0.7553	23.82	0.7556	24.31	0.7560

Image 58:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.85	0.8779	30.23	0.9130	30.32	0.9068	30.49	0.9114	31.04	0.9186
x3	26.44	0.7997	27.86	0.8436	27.99	0.8428	28.01	0.8449	28.36	0.8472
x4	24.99	0.7401	26.21	0.7823	26.23	0.7858	26.35	0.7865	26.72	0.7870

Image 59:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.81	0.8391	27.08	0.8930	27.14	0.8860	27.25	0.8910	27.73	0.8968
x3	23.57	0.7313	24.87	0.7995	25.01	0.8007	24.99	0.8018	25.44	0.8045
x4	22.32	0.6507	23.25	0.7173	23.37	0.7264	23.42	0.7246	23.91	0.7265

Image 60:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.60	0.8772	27.97	0.9147	28.07	0.9083	28.22	0.9135	28.82	0.9201
x3	24.20	0.7949	25.75	0.8448	25.86	0.8461	25.82	0.8468	26.36	0.8508
x4	22.77	0.7281	24.02	0.7801	23.97	0.7836	24.08	0.7843	24.57	0.7878

Image 61:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.02	0.8552	29.32	0.9019	29.38	0.8948	29.50	0.9006	30.09	0.9059
x3	25.66	0.7596	27.06	0.8172	27.21	0.8203	27.25	0.8228	27.62	0.8237
x4	24.28	0.6871	25.38	0.7457	25.50	0.7541	25.57	0.7529	26.03	0.7547

Image 62:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.69	0.8382	28.13	0.8910	28.28	0.8848	28.36	0.8899	28.99	0.8949
x3	24.24	0.7289	25.76	0.7956	25.94	0.7957	25.91	0.7973	26.33	0.7976
x4	22.84	0.6463	23.95	0.7098	24.01	0.7146	24.15	0.7152	24.49	0.7136

Image 63:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.05	0.8982	27.58	0.9286	27.41	0.9224	27.68	0.9286	28.38	0.9365
x3	23.49	0.8248	25.39	0.8724	25.62	0.8759	25.51	0.8768	26.09	0.8814
x4	22.05	0.7638	23.73	0.8180	23.81	0.8237	23.83	0.8247	24.26	0.8256

Image 64:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.02	0.8206	27.18	0.8754	27.35	0.8630	27.47	0.8735	28.05	0.8786
x3	23.81	0.7112	24.92	0.7703	25.10	0.7670	25.15	0.7741	25.40	0.7708
x4	22.47	0.6279	23.24	0.6802	23.36	0.6843	23.47	0.6887	23.79	0.6828

Image 65:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.26	0.8797	26.56	0.9186	26.64	0.9097	26.81	0.9175	27.39	0.9243
x3	22.88	0.7941	24.27	0.8468	24.37	0.8459	24.42	0.8492	24.80	0.8492
x4	21.51	0.7256	22.56	0.7778	22.50	0.7794	22.72	0.7843	23.16	0.7846

Image 66:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.37	0.8757	27.85	0.9155	27.92	0.9109	28.05	0.9140	28.70	0.9229
x3	24.00	0.7890	25.51	0.8428	25.69	0.8457	25.64	0.8456	26.13	0.8505
x4	22.62	0.7209	23.77	0.7754	23.77	0.7799	23.93	0.7802	24.45	0.7848

Image 67:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.03	0.8539	26.52	0.9011	26.62	0.8971	26.77	0.9013	27.36	0.9093
x3	22.58	0.7486	24.08	0.8133	24.31	0.8184	24.21	0.8167	24.69	0.8228
x4	21.13	0.6637	22.32	0.7357	22.38	0.7435	22.42	0.7403	22.87	0.7436

Image 68:

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.69	0.8616	26.87	0.9063	27.07	0.9020	27.09	0.9056	27.70	0.9118
x3	23.30	0.7653	24.71	0.8261	24.89	0.8293	24.89	0.8301	25.34	0.8324
x4	21.86	0.6876	22.81	0.7492	22.97	0.7565	23.03	0.7567	23.43	0.7576

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

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Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.59	0.8858	29.08	0.9168	29.33	0.9143	29.51	0.9177	30.22	0.9242
x3	24.97	0.8092	26.62	0.8512	27.07	0.8577	26.99	0.8574	27.36	0.8611
x4	23.42	0.7486	24.64	0.7891	24.93	0.8008	24.94	0.7989	25.37	0.8010

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Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	30.27	0.8989	31.33	0.9299	31.32	0.9216	31.43	0.9260	32.07	0.9313
x3	28.01	0.8301	29.06	0.8689	29.13	0.8659	29.19	0.8680	29.47	0.8683
x4	26.78	0.7776	27.51	0.8136	27.56	0.8150	27.72	0.8173	28.03	0.8162

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Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.47	0.8393	30.46	0.8900	30.66	0.8838	30.67	0.8885	31.28	0.8922
x3	27.28	0.7399	28.35	0.7979	28.50	0.7969	28.49	0.7991	28.85	0.7979
x4	26.07	0.6679	26.82	0.7192	26.94	0.7239	27.00	0.7238	27.46	0.7231

72

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.88	0.8782	27.39	0.9190	27.50	0.9148	27.60	0.9181	28.22	0.9260
x3	23.39	0.7885	24.98	0.8459	25.23	0.8502	25.12	0.8487	25.61	0.8523
x4	21.97	0.7148	23.18	0.7742	23.19	0.7804	23.34	0.7802	23.80	0.7837

73

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	24.36	0.8292	25.56	0.8896	25.67	0.8813	25.76	0.8878	26.23	0.8925
x3	22.08	0.7090	23.32	0.7868	23.43	0.7874	23.44	0.7887	23.82	0.7901
x4	20.84	0.6168	21.72	0.6940	21.81	0.6997	21.88	0.6990	22.31	0.6994

74

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.69	0.8539	29.06	0.8996	29.11	0.8922	29.26	0.8972	29.84	0.9020
x3	25.27	0.7590	26.73	0.8148	26.90	0.8130	26.87	0.8155	27.36	0.8157
x4	23.91	0.6866	24.97	0.7400	25.07	0.7427	25.15	0.7432	25.62	0.7447

75

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.37	0.8566	29.79	0.9020	29.91	0.8950	30.01	0.8989	30.54	0.9037
x3	25.98	0.7655	27.63	0.8211	27.81	0.8194	27.76	0.8207	28.21	0.8221
x4	24.59	0.6972	25.86	0.7494	26.06	0.7541	26.04	0.7523	26.52	0.7554

76

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.38	0.8692	28.08	0.9107	28.14	0.9055	28.35	0.9097	28.94	0.9160
x3	23.87	0.7819	25.57	0.8354	25.89	0.8387	25.73	0.8374	26.30	0.8425
x4	22.46	0.7138	23.70	0.7643	23.89	0.7737	23.91	0.7706	24.31	0.7745

77

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.92	0.8985	31.23	0.9270	31.31	0.9202	31.46	0.9244	32.12	0.9321
x3	27.57	0.8352	29.02	0.8704	29.14	0.8694	29.13	0.8707	29.62	0.8756
x4	26.13	0.7871	27.36	0.8208	27.30	0.8215	27.49	0.8234	27.96	0.8266

78

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.42	0.8949	28.89	0.9288	29.00	0.9247	29.16	0.9271	29.76	0.9348
x3	24.95	0.8211	26.63	0.8667	26.82	0.8689	26.78	0.8687	27.19	0.8737
x4	23.54	0.7629	24.97	0.8127	25.08	0.8176	25.15	0.8175	25.67	0.8219

79

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.19	0.8501	26.41	0.8973	26.42	0.8898	26.58	0.8956	27.15	0.9022
x3	22.90	0.7522	24.10	0.8131	24.21	0.8121	24.20	0.8137	24.63	0.8156
x4	21.65	0.6776	22.51	0.7388	22.51	0.7418	22.64	0.7425	23.08	0.7427

80

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.63	0.8863	29.10	0.9170	29.35	0.9145	29.55	0.9178	30.25	0.9247
x3	25.04	0.8107	26.67	0.8524	27.09	0.8581	27.04	0.8587	27.43	0.8612
x4	23.46	0.7504	24.76	0.7920	24.98	0.8030	25.09	0.8018	25.55	0.8045

81

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	30.39	0.8841	31.73	0.9150	31.77	0.9077	31.95	0.9117	32.60	0.9185
x3	28.12	0.8161	29.69	0.8515	29.80	0.8491	29.85	0.8519	30.29	0.8538
x4	26.63	0.7654	28.03	0.7988	28.11	0.7995	28.23	0.8025	28.59	0.8047

82

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.39	0.8406	28.58	0.8919	28.67	0.8842	28.74	0.8898	29.28	0.8950
x3	25.13	0.7359	26.31	0.7990	26.43	0.7983	26.45	0.8002	26.82	0.8012
x4	23.80	0.6541	24.69	0.7151	24.73	0.7194	24.82	0.7200	25.23	0.7196

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.34	0.8378	27.64	0.8862	27.74	0.8747	27.90	0.8836	28.47	0.8904
x3	24.06	0.7380	25.32	0.7922	25.47	0.7890	25.57	0.7950	25.86	0.7953
x4	22.66	0.6611	23.58	0.7083	23.68	0.7148	23.87	0.7174	24.19	0.7162

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.61	0.8799	29.95	0.9169	30.13	0.9101	30.24	0.9143	30.98	0.9210
x3	26.22	0.8065	27.78	0.8496	27.90	0.8477	27.95	0.8497	28.51	0.8541
x4	24.79	0.7509	26.01	0.7914	26.04	0.7956	26.21	0.7953	26.75	0.7986

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	30.06	0.9009	31.80	0.9299	31.85	0.9232	32.05	0.9259	32.65	0.9342
x3	27.56	0.8370	29.64	0.8753	29.89	0.8734	29.80	0.8743	30.37	0.8793
x4	25.99	0.7857	27.75	0.8246	27.83	0.8261	27.91	0.8260	28.59	0.8301

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.35	0.8369	27.58	0.8857	27.70	0.8745	27.87	0.8835	28.48	0.8892
x3	24.10	0.7360	25.21	0.7903	25.38	0.7867	25.48	0.7930	25.80	0.7926
x4	22.73	0.6598	23.50	0.7065	23.63	0.7125	23.80	0.7147	24.15	0.7127

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.95	0.8596	29.35	0.9052	29.40	0.8975	29.56	0.9037	30.22	0.9092
x3	25.53	0.7670	27.06	0.8238	27.14	0.8247	27.28	0.8285	27.66	0.8312
x4	24.13	0.6964	25.35	0.7539	25.37	0.7591	25.61	0.7606	26.09	0.7647

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.40	0.8771	29.01	0.9170	29.04	0.9114	29.23	0.9158	29.85	0.9229
x3	24.90	0.7942	26.82	0.8486	27.00	0.8494	26.96	0.8510	27.45	0.8541
x4	23.39	0.7264	25.04	0.7836	25.13	0.7891	25.18	0.7885	25.66	0.7916

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.58	0.8145	26.71	0.8741	26.74	0.8628	26.91	0.8719	27.34	0.8757
x3	23.39	0.6962	24.37	0.7639	24.51	0.7635	24.51	0.7655	24.88	0.7660
x4	22.21	0.6110	22.80	0.6729	22.87	0.6787	22.99	0.6782	23.36	0.6772

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	29.19	0.8952	30.74	0.9263	30.83	0.9202	30.91	0.9232	31.62	0.9296
x3	26.86	0.8335	28.52	0.8691	28.73	0.8693	28.74	0.8703	29.24	0.8734
x4	25.45	0.7867	26.65	0.8199	26.80	0.8252	26.93	0.8246	27.44	0.8276

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	30.05	0.9046	31.52	0.9302	31.57	0.9231	31.77	0.9279	32.42	0.9355
x3	27.62	0.8471	29.39	0.8795	29.51	0.8775	29.54	0.8804	30.00	0.8848
x4	26.16	0.8037	27.68	0.8362	27.76	0.8374	27.79	0.8391	28.32	0.8436

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.02	0.8906	27.66	0.9257	27.69	0.9190	27.91	0.9256	28.79	0.9340
x3	23.39	0.8069	25.02	0.8591	25.17	0.8599	25.10	0.8619	25.64	0.8654
x4	21.87	0.7353	23.11	0.7912	23.09	0.7935	23.15	0.7947	23.61	0.7961

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.88	0.8809	30.26	0.9157	30.36	0.9096	30.50	0.9140	31.12	0.9200
x3	26.45	0.8043	27.87	0.8474	28.06	0.8476	28.06	0.8493	28.42	0.8515
x4	25.02	0.7471	26.25	0.7905	26.24	0.7922	26.43	0.7945	26.77	0.7964

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.92	0.8988	27.43	0.9320	27.55	0.9299	27.74	0.9321	28.33	0.9389
x3	23.45	0.8217	25.14	0.8743	25.35	0.8791	25.30	0.8776	25.82	0.8829
x4	22.03	0.7552	23.40	0.8141	23.49	0.8207	23.57	0.8187	24.04	0.8223

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.67	0.8845	28.28	0.9198	28.28	0.9143	28.51	0.9188	29.14	0.9263
x3	24.13	0.8055	25.91	0.8554	25.97	0.8556	26.04	0.8574	26.42	0.8594
x4	22.70	0.7419	24.11	0.7919	24.07	0.7960	24.28	0.7974	24.66	0.8009

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	26.85	0.8646	28.40	0.9094	28.42	0.9039	28.60	0.9078	29.30	0.9150
x3	24.38	0.7709	26.11	0.8321	26.23	0.8342	26.24	0.8342	26.66	0.8383
x4	22.92	0.6941	24.33	0.7563	24.36	0.7638	24.50	0.7629	24.94	0.7660

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.26	0.8501	26.45	0.8968	26.50	0.8895	26.65	0.8951	27.23	0.9022
x3	22.96	0.7522	24.20	0.8124	24.31	0.8117	24.29	0.8134	24.64	0.8155
x4	21.72	0.6785	22.60	0.7390	22.66	0.7425	22.72	0.7424	23.15	0.7430

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	27.83	0.8642	29.24	0.9078	29.27	0.9010	29.37	0.9050	30.04	0.9131
x3	25.40	0.7723	26.88	0.8286	27.00	0.8284	26.92	0.8279	27.39	0.8324
x4	24.11	0.7025	25.14	0.7561	25.14	0.7607	25.26	0.7586	25.75	0.7607

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	25.01	0.8321	26.27	0.8867	26.41	0.8787	26.43	0.8843	27.01	0.8918
x3	22.65	0.7176	23.89	0.7857	24.07	0.7878	24.01	0.7880	24.47	0.7904
x4	21.36	0.6305	22.19	0.6950	22.15	0.7005	22.30	0.6998	22.78	0.7007

Ratio	Bicubic		SRCNN		VDSR		PSyCo		Our method	
x2	28.21	0.8562	29.54	0.9028	29.65	0.8963	29.77	0.9019	30.42	0.9074
x3	25.88	0.7640	27.32	0.8200	27.49	0.8229	27.53	0.8253	27.93	0.8272
x4	24.46	0.6912	25.66	0.7506	25.76	0.7587	25.82	0.7571	26.34	0.7596

Red numbers indicate the highest accuracy, and blue numbers present the second highest accuracy.