Supplementary Material - One Shot 3D Photography

Below, we provide additional metrics for the depth evaluation, as well as a detailed description of the Tiefenrausch network.

Table 1. Depth evaluation.

Method	Training data	Resolution	Quality (MegaDepth test split)							Quality (ReDWeb)						
			$\delta < 1.25\uparrow$	$\delta < 1.25^2\uparrow$	$\delta < 1.25^3\uparrow$	Abs rel$\downarrow$	Sq rel$\downarrow$	siRMSE$\downarrow$	RMSE$\downarrow$	$\delta < 1.25\uparrow$	$\delta < 1.25^2\uparrow$	$\delta < 1.25^3\uparrow$	Abs rel$\downarrow$	Sq rel$\downarrow$	siRMSE$\downarrow$	RMSE$\downarrow$
Midas (v1)	RW, MD, MV	384	0.955	0.987	0.994	0.068	0.007	0.094	0.027	0.668	0.801	0.849	0.740	0.126	0.840	0.067
Midas (v2)	RW, DL, MV, MD, WSVD	384	0.965	0.990	0.995	0.058	0.008	0.085	0.022	0.662	0.793	0.843	1.342	0.225	0.827	0.071
Monodepth2	K	1024×320	0.845	0.956	0.983	0.145	0.019	0.165	0.049	0.350	0.562	0.682	4.368	1.067	1.181	0.176
SharpNet	PBRS → NYUv2	640	0.839	0.956	0.983	0.146	0.017	0.167	0.051	0.308	0.529	0.663	6.616	1.892	1.221	0.196
MegaDepth	DIW → MD	384	0.929	0.982	0.992	0.086	0.010	0.115	0.033	0.434	0.635	0.736	2.270	0.466	1.137	0.137
Ken Burns	MD, NYUv2, KB	1024	0.948	0.985	0.993	0.070	0.008	0.107	0.026	0.438	0.634	0.734	2.968	0.632	1.067	0.140
PyD-Net	CS → K	512	0.836	0.955	0.982	0.148	0.021	0.168	0.052	0.310	0.525	0.656	5.218	1.411	1.205	0.198
Tiefenrausch (ours)	MD	384	0.941	0.983	0.993	0.079	0.009	0.109	0.031	0.382	0.597	0.714	1.950	0.374	1.041	0.156

Table 2. Tiefenrausch model stage descriptions. As the network has multiple paths, the stages are labeled (e.g., 0A) and the inputs to the stages are indicated as Input Stage(s). TRB $K \times K$ is the efficient block structure with a kernel size of K. Repeat is the number of times the operator is repeated in that stage. In the case where repeat > 1 and stride > 1, only the initial block in the stage has stride > 1.

Stage	Input	Operator	Exp factor	Out Channels	Stride	Repeat	Input Stage(s)
0A	$3 \times 384 \times 288$	Conv2d 3×3, BN, ReLU	-	48	1	1	Input
0B	$48 \times 384 \times 288$	TRB 3×3	-	32	1	3	0A
0C	$32 \times 384 \times 288$	Conv2d 3×3, BN, ReLU	-	1	1	1	0B, 1C
1A	$48 \times 384 \times 288$	TRB 3×3	-	40	2	3	0B
1B	$40 \times 192 \times 144$	TRB 3×3	-	8	1	3	1A
1C	$8 \times 192 \times 144$	TRB 3×3	-	32	1	3	1B, 2C
2A	$8 \times 192 \times 144$	TRB 3×3	4	56	2	3	1B
2B	$56 \times 96 \times 72$	TRB 3×3	4	56	1	3	2A
2C	$56 \times 96 \times 72$	TRB 3×3	4	8	1	3	2B, 3C
3A	$56 \times 96 \times 72$	TRB 3×3	5	80	2	3	2B
3B	$80 \times 48 \times 36$	TRB 3×3	5	96	1	3	3A
3C	$96 \times 48 \times 36$	TRB 3×3	5	56	1	3	3B, 4C
4A	$96 \times 48 \times 36$	TRB 3×3	9	64	2	3	3B
4B	$64 \times 24 \times 18$	TRB 3×3	9	96	1	3	4A
4C	$96 \times 24 \times 18$	TRB 3×3	9	96	1	3	4B, 5C
5A	$96 \times 24 \times 18$	TRB 3×3	9	96	2	3	4B
5B	$96 \times 12 \times 9$	TRB 3×3	9	96	1	3	5A
5C	$96 \times 12 \times 9$	TRB 3×3	9	96	1	3	5B