Fast Sun-aligned Outdoor Scene Relighting based on TensoRF —Supplementary Material—

	Site 1	Site 2	Site 3
Learning Rate (for Tensors)	$[0.01, 0.002]$		
Learning Rate (for MLPs)	$[0.001, 0.0002]$		
Iteration	54860	158777	136095
λ_1(for $\mathcal{L}_1$)	$[0.01, 0.001]$		
λ_2(for $\mathcal{L}_{\text{TV of}}\,\mathcal{G}_\sigma$)	0.1		
λ_3(for $\mathcal{L}_{\text{TV of}}\,\mathcal{G}_a$)	0.01		
λ_3(for $\mathcal{L}_{\text{TV of}}\,\mathcal{G}_{cubemap}$)	0.01		
λ_2(for $\mathcal{L}_{\text{shadow}}$ regularization)	0.001		

Table A. **Details of hyperparameters and loss weight terms.** $[a, b]$ indicates the annealing from a to b.

(a) AM 08:00 (b) PM 14:00 (c) PM 19:00

Figure A. **Relight by time.** Results when keeping other factors constant and only changing the sun direction for Site 2. The building is facing northwest.

(a) AM 11:00 (b) PM 12:00 (c) PM 13:00

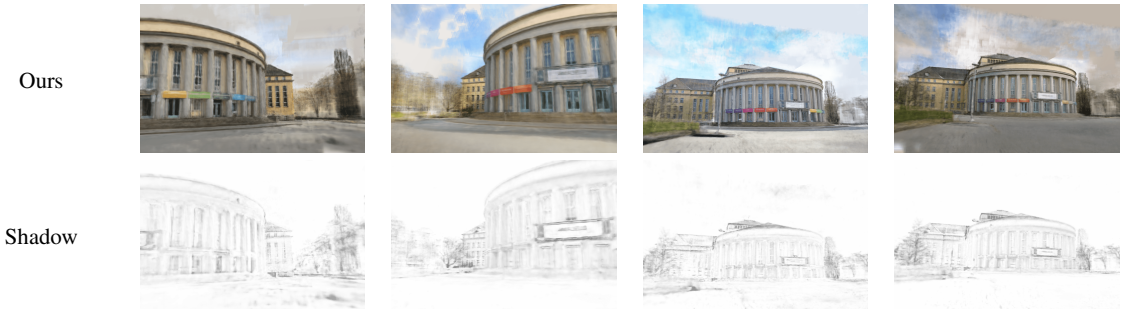
Figure B. **Relight by time.** Results when keeping other factors constant and only changing the sun direction for Site 3. The building is facing southeast.

A. Implementation Details

Tab. A presents the details of hyperparameters and our weights of the loss terms, which are tailored to the NeRF-OSR dataset [1].

B. Relighting Results

Fig. A shows the shadows rendered for relighting for Site 2, and Fig. B for Site 3. Fig. C shows the additional qualitative results of relighting.



(a) Site 2

(b) Site 3

Figure C. **Additional Relight Rendering.**

References

[1] Viktor Rudnev, Mohamed Elgharib, William Smith, Lingjie Liu, Vladislav Golyanik, and Christian Theobalt. Nerf for outdoor scene relighting. In *European Conference on Computer Vision*, pages 615–631. Springer, 2022. 1