HumanOLAT: A Large-Scale Dataset for Full-Body Human Relighting and Novel-View Synthesis

Supplementary Material

This supplement discusses the ethical concerns in App. A, provides additional results in App. B and samples of the dataset in App. C; and describes how we obtain Open-Pose annotations and SMPL-X shape parameters in App. D.

A. Ethical Concerns

Every subject was informed about the targeted use for the collected data and consented to making their captures publicly available for scientific purposes. Moreover, we recognize that our dataset could be used in the development of nefarious methods aiming to produce misleading media. To combat potential misuse, researchers are required to explicitly apply for access to *HumanOLAT* and describe their intended use of the dataset.

B. Additional Results

B.1. Additional Quantitative Results

Tab. 3 provides the detailed per-subject results of the averaged quantitative evaluation of PRT-Gaussian [58], GS^3 [4], RNG [15] and BiGS [62] found in Tab. 2. Moreover, to supplement the qualitative results shown in Fig. 7, we show quantitative results for illumination harmonization against a target background using IC-Light [59] in Tab. 4.

B.2. Additional Qualitative Results

We provide additional qualitative results for the evaluations presented in Sec. 4 in Fig. 12 and Fig. 13.

B.3. Evaluation on IntrinsicAvatar

In addition to the evaluations presented in Section 4, we adapt IntrinsicAvatar [48] to our setting and train it on one subject from our dataset. We fix one of three poses and supply known lighting conditions during training. Qualitative and quantitative results are shown in Fig. 8. While our adapted implementation can learn some aspects of light transfer, it struggles with estimating detailed geometry and produces strongly blurred results.

C. Additional Samples of the Dataset

We show additional samples of captured images from the proposed dataset in Fig. 11. Additional samples regarding the clothing variety in our dataset can be found in Fig. 9.

D. OpenPose and SMPL-X Annotations

We offer pose annotations and SMPL-X [40] parameters estimated using OpenPose [6] and EasyMocap [1], respec-

Method	Subject	PSNR ↑	LPIPS ↓	SSIM ↑
PRT-Gaussian [58]		22.64	0.237	0.778
GS^3 [4]	C003	28.44	0.172	0.876
RNG [15]	POSE_00	26.55	0.157	0.893
BiGS [62]		25.06	0.237	0.924
PRT-Gaussian [58]		25.15	0.250	0.794
GS^3 [4]	C006	30.64	0.180	0.876
RNG [15]	POSE_00	28.17	0.1518	0.892
BiGS [62]		26.08	0.254	0.914
PRT-Gaussian [58]		27.51	0.203	0.842
GS^3 [4]	C010	32.66	0.151	0.906
RNG [15]	POSE_01	29.43	0.135	0.907
BiGS [62]		30.37	0.177	0.944
PRT-Gaussian [58]		23.44	0.185	0.830
GS^3 [4]	C028	30.13	0.131	0.904
RNG [15]	POSE_01	27.34	0.122	0.921
BiGS [62]		27.05	0.160	0.952
PRT-Gaussian [58]		24.95	0.182	0.825
GS^3 [4]	C048	30.70	0.137	0.897
RNG [15]	POSE_00	28.80	0.122	0.914
BiGS [62]		28.31	0.169	0.942
PRT-Gaussian [58]		20.69	0.212	0.792
GS^3 [4]	C058	27.68	0.141	0.894
RNG [15]	POSE_00	24.01	0.146	0.904
BiGS [62]		23.42	0.210	0.942

Table 3. Quantitative per-subject relighting results for OLAT-based relighting methonds.

Subject	PSNR ↑	LPIPS ↓	SSIM ↑
C003	15.28	0.232	0.541
C006	15.33	0.252	0.558
C010	17.57	0.213	0.570
C028	15.29	0.280	0.523
C048	16.15	0.268	0.538
C058	14.60	0.278	0.546

Table 4. Quantitative results for IC-Light [59] for six representative subjects.

tively. For the poses, we utilize the recommended pre-built OpenPose Windows binary to generate annotations for all white-light illumination frames. Following, SMPL-X shape parameters are regressed from these annotations using the `mv1p.py` script provided by EasyMocap. We use the default settings defined by EasyMocap and set the body and gender arguments to `bodyhandface` and `neutral`, respectively. See Fig. 10 for a visualization of the SMPL-X estimations.

PSNR	LPIPS	SSIM
21.90	0.207	0.848

Ground Truth   **Intrinsic Avatar**

Figure 8. Qualitative and quantitative results for our adapted implementation of IntrinsicAvatar [48].

Figure 10. Visualization of SMPL-X poses estimated using OpenPose [6] and EasyMocap [1].

Figure 9. Additional samples showing the variety of clothing in *HumanOLAT*.

Figure 11. Additional visualizations of samples from *HumanOLAT*. Here, we select seven subjects under a randomly chosen pose and camera view and depict images captured under white light, color gradient and a randomly chosen environment and OLAT illuminations.
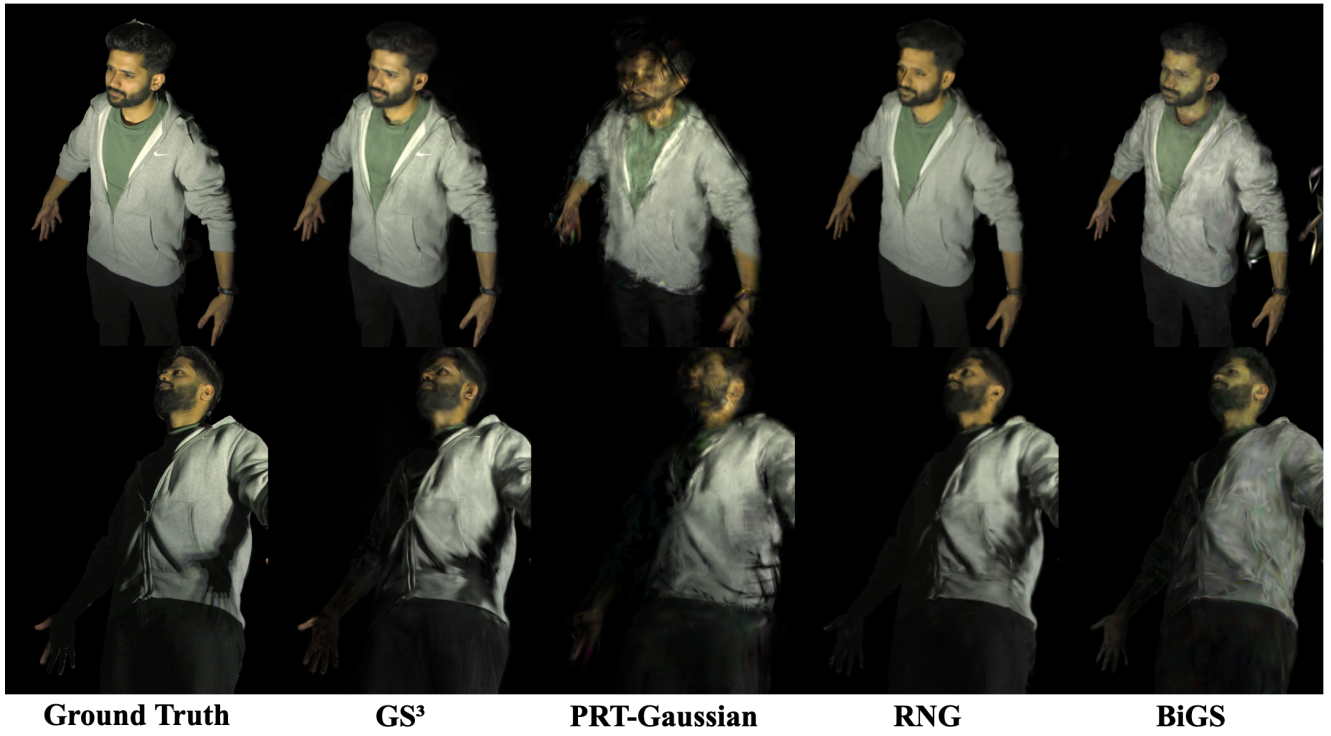
Ground Truth **GS³** **PRT-Gaussian** **RNG** **BiGS**

Figure 12. Additional qualitative results for GS^3 [4], PRT-Gaussian [58], RNG [15] and BiGS [62] as presented in Fig. 6.

Illumination Harmonization with IC-Light **Comparison against Ground Truth**

Input Foreground **Produced Relit Images** **Close-ups** **Target Background** **GT** **IC-Light Prediction**
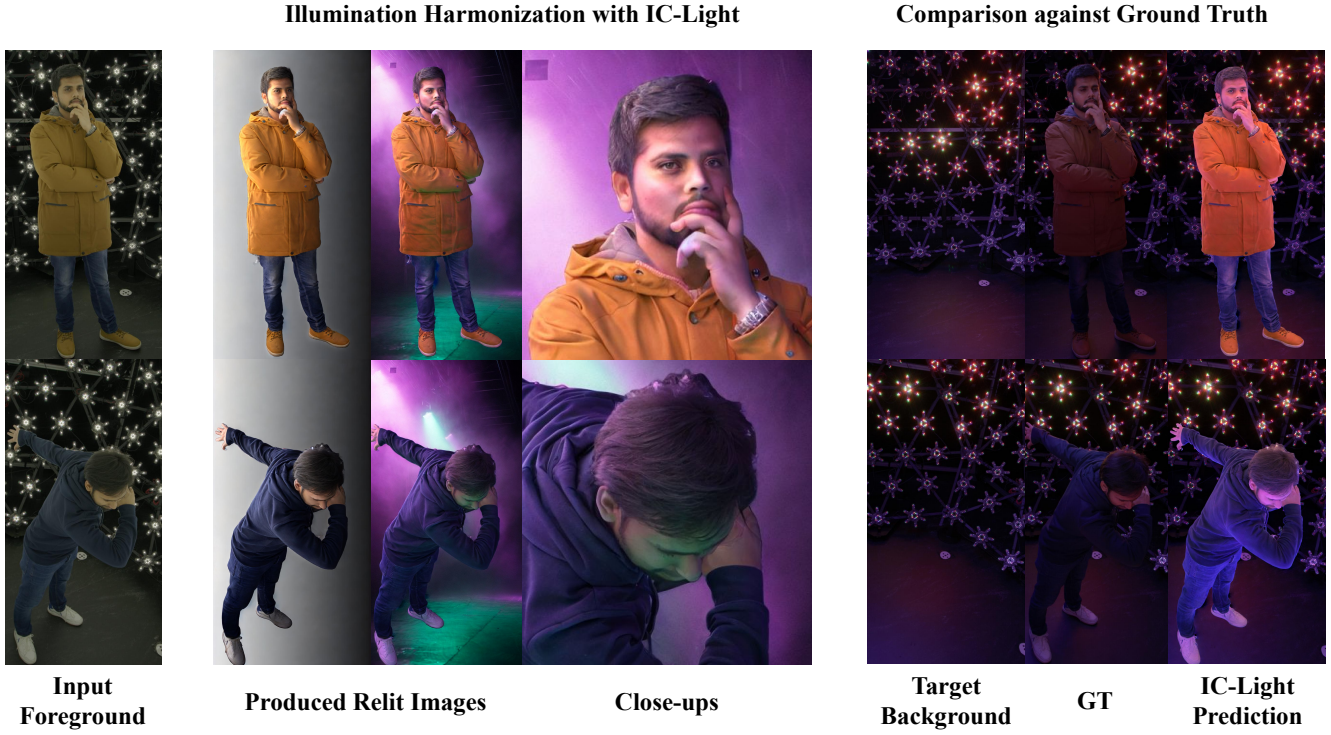
Figure 13. Additional qualitative illustrations for illumination harmonization with IC-Light [59].