Appendix

A IMPLEMENTATION SPECIFICATIONS

All models for testing the Poster101K dataset are implemented in PyTorch1.9. All the experiments are conducted on 4 NVIDIA GeForce RTX 3090 GPUs. The LACE model is trained with a 1e-6 learning rate, and the others are trained with 1e-4. The batch size is 256 for the LACE model and 64 for the others.

B R-GEN TASK RESULTS

Results of R-Gen task. This task is conditioned on the category of elements and some relationship constraints between the elements. CLG-LO is the only model suitable for the R-Gen task among the four models. Tab. 1 shows that the model generates better layouts with our dataset Poster101K*. Meanwhile, the generated layouts using our dataset have an overlap score of 22.01, lower than that of using the other tested datasets. However, compared to our dataset, considering the data in PubLayNet and Rico are relatively more structured, it is easier to reach a low alignment score for the R-Gen task. This result indicates that it is challenging for the model to generate high-quality unstructured layouts.

Table 1: Quantitative comparison in the R-Gen task. Top results are highlighted in **bold**.

Models	CLG-LO			
Dataset	mIoU ↑	Overlap ↓	Align. ↓	FID ↓
PubLayNet	0.35	23.46	0.22	0.04
Rico	0.36	57.92	0.36	0.05
MagLayout	0.26	31.91	0.97	0.10
Poster101K*	0.31	**22.01**	1.00	**0.02**

C ABLATION RESULTS

We conducted an ablation study to check the influence of the underlay design element. We labelled all the underlay design elements in each poster image of our dataset, and duplicated our dataset but removed all the underlay design elements (Poster101K*) to figure out how the underlay affected the canvas overlay result. The experimental results are given in Tab. 2. The table shows lower (i.e., better) overlap results when all the underlay elements are ignored (the 2nd

metric of each task). Besides, the variation of the alignment score explains that the appearance of the underlay elements makes the canvas look neater (the 3rd metric of each task).

CLG-LO	Beau. Constrains Generation				Rela. Constraints Generation				U-Gen			
Dataset	mIOU	Overlap	Align.	FID	mIOU	Overlap	Align.	FID	mIOU	Overlap	Align.	FID
Poster101K*	0.29	1.85	0.24	0.06	0.31	22.01	1.00	0.02	0.31	22.92	0.88	0.02
Poster101K	0.21	0.80	0.18	0.28	0.26	40.80	0.40	0.07	0.25	43.76	0.29	0.15
DLT	C-Gen				CS-Gen				U-Gen			
Dataset	pIOU	Overlap	Align.	FID	pIOU	Overlap	Align.	FID	pIOU	Overlap	Align.	FID
Poster101K*	11.22	36.9	0.80	6.06	13.5	48.99	0.77	0.6	8.16	27.6	0.84	3.48
Poster101K	17.33	50.34	0.70	5.68	19.58	62.59	0.67	0.5	14.47	40.52	0.71	3.85
LayoutFormer++	C-Gen				CS-Gen				U-Gen			
Dataset	mIOU	Overlap	Align.	FID	mIOU	Overlap	Align.	FID	mIOU	Overlap	Align.	FID
Poster101K*	0.268	0.503	0.0014	0.374	0.363	0.345	0.012	0.027	0.527	0.345	0.056	4.959
Poster101K	0.260	0.668	0.0025	0.479	0.368	0.457	0.008	0.022	0.488	0.603	0.017	1.951
LACE	C-Gen				CS-Gen				U-Gen			
Dataset	mIOU	Overlap	Align.	FID	mIOU	Overlap	Align.	FID	mIOU	Overlap	Align.	FID
Poster101K*	0.131	8.026	1.025	1.641	0.170	11.434	1.402	1.628	-	37.895	1.404	1.676
Poster101K	0.109	22.819	0.899	1.327	0.155	31.068	1.051	1.296	-	38.036	0.665	1.455

Table 2: Ablation on Underlay labels (Poster101K* represents the filtered dataset without underlay labels)

D Color Aesthetics Evaluation

We evaluate the color aesthetics of Poster101K by using the Image Color Aesthetics Assessment (ICAA) method, trained initially on the ICAA17K photography dataset. Tab. 3 shows that Poster101K achieves a holistic color score of 5.54, close to ICAA17K's 5.88. This minor gap (0.34) may stem from different image types. ICAA17K mainly contains images of natural scenes, while images in our dataset are posters. This result demonstrates that Poster101K's color annotations capture professionally designed aesthetics, providing a reliable basis for color-related research on posters.

Table 3: Comparison of color aesthetics assessment.

Dataset	**Color Score**	**Temperature**	**Colorfulness**	**Harmony**
ICAA17K	5.88	5.90	5.56	7.12
Poster101K	5.54	5.16	3.64	5.43

E QUALITATIVE COMPARISON

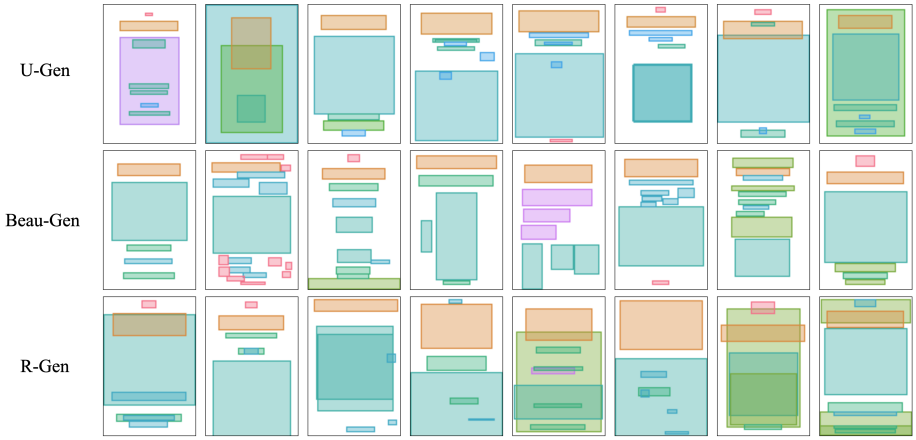

Figure 1: Qualitative results of CGL-LO on Poster101K

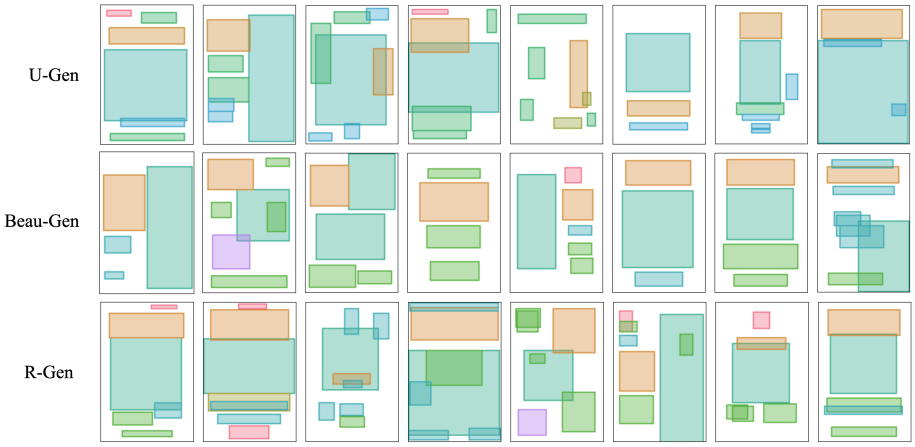

Figure 2: Qualitative results of CGL-LO on Poster101K*

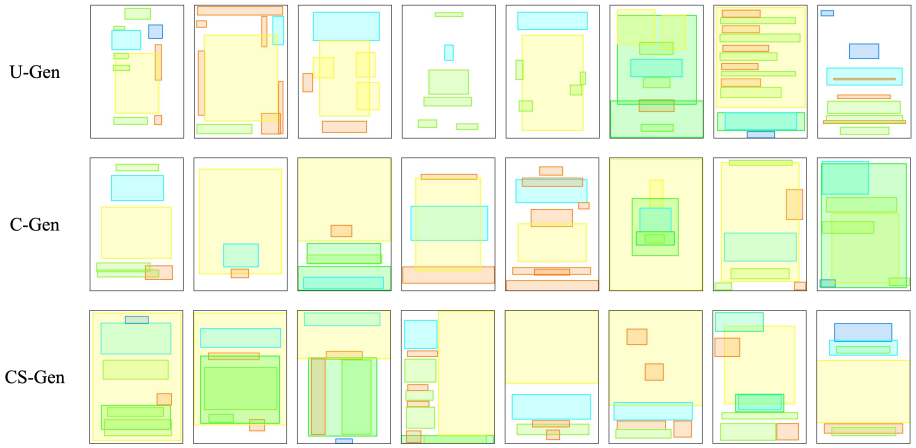

Figure 3: Qualitative results of DLT on Poster101K

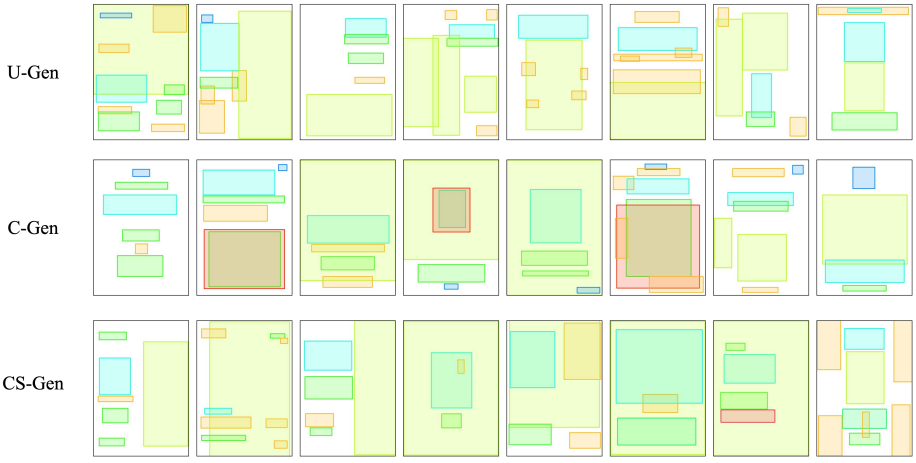

Figure 4: Qualitative results of DLT on Poster101K*

Figure 5: Qualitative results of LayoutFormer++ on Poster101K

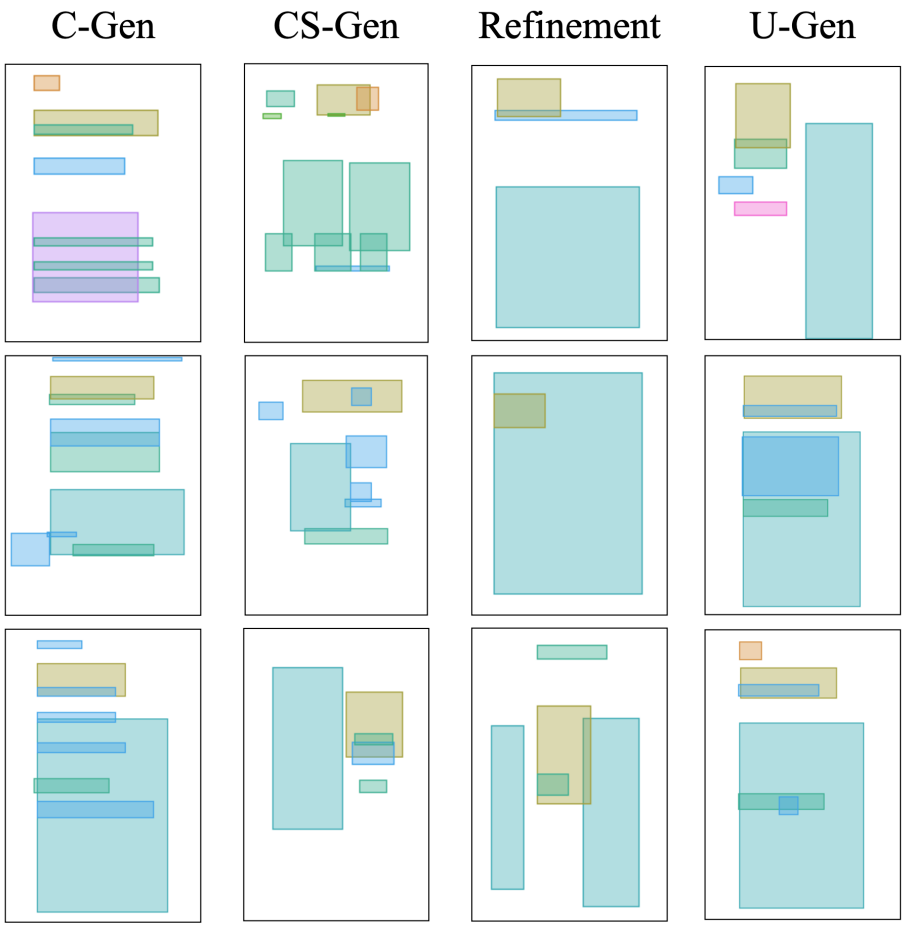

Figure 6: Qualitative results of LayoutFormer++ on Poster101K*

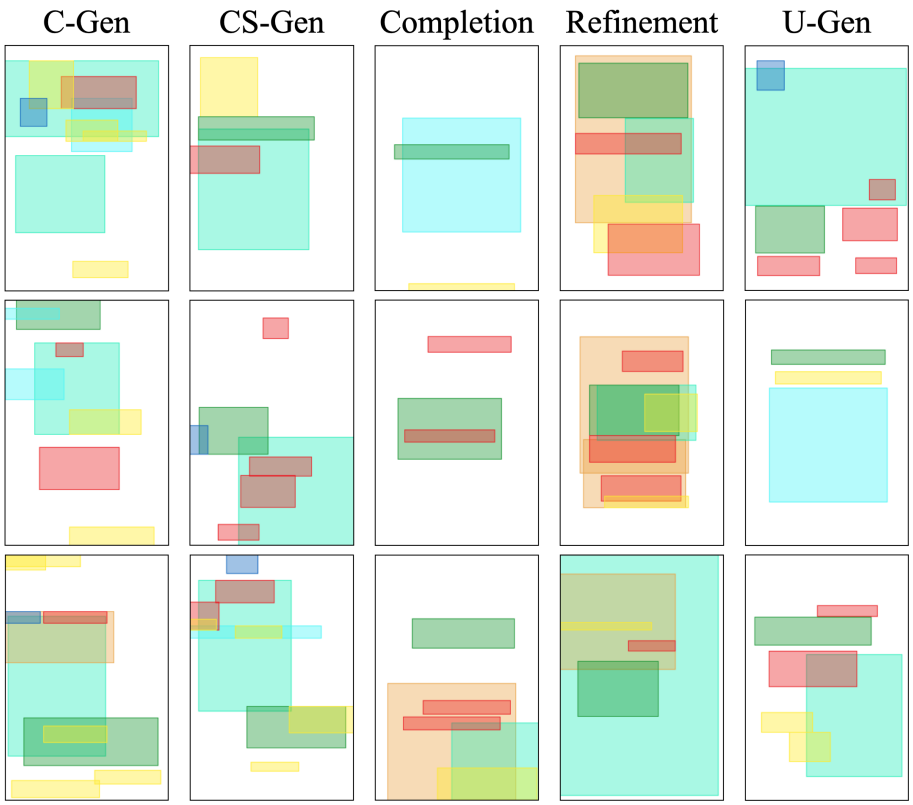

Figure 7: Qualitative results of LACE on Poster101K

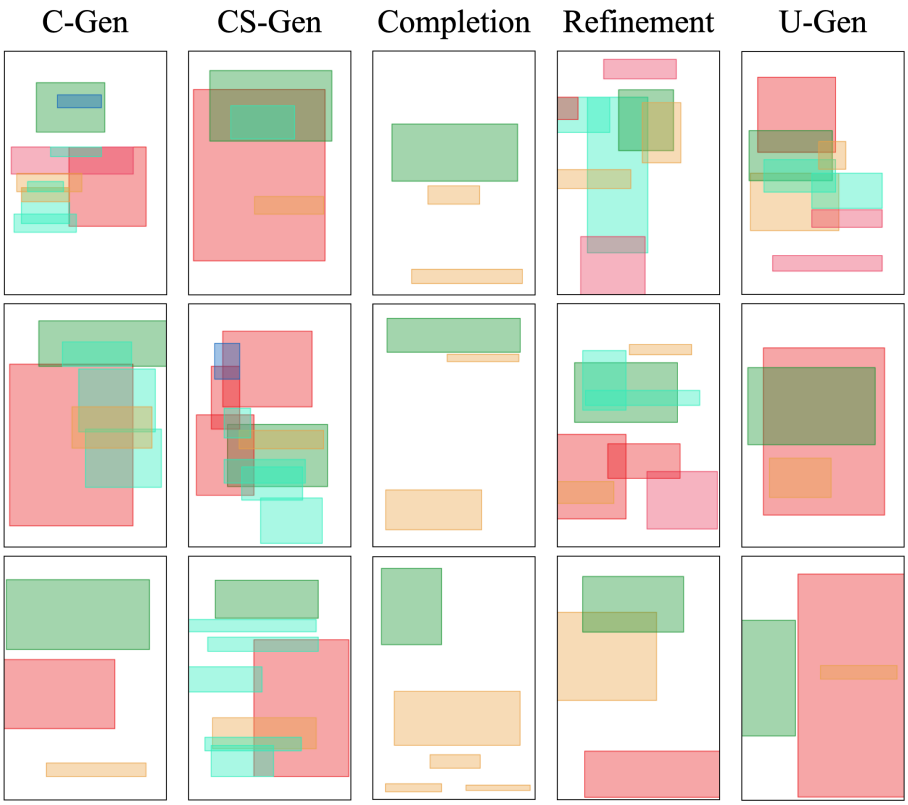

Figure 8: Qualitative results of LACE on Poster101K*