Create Bokeh for Stylized Photography

Jean-Peïc Chou

What is bokeh?

Definition: The aesthetic quality of the blur in out-of-focus parts of an image.

Anamorphic



Swirly



Related Works

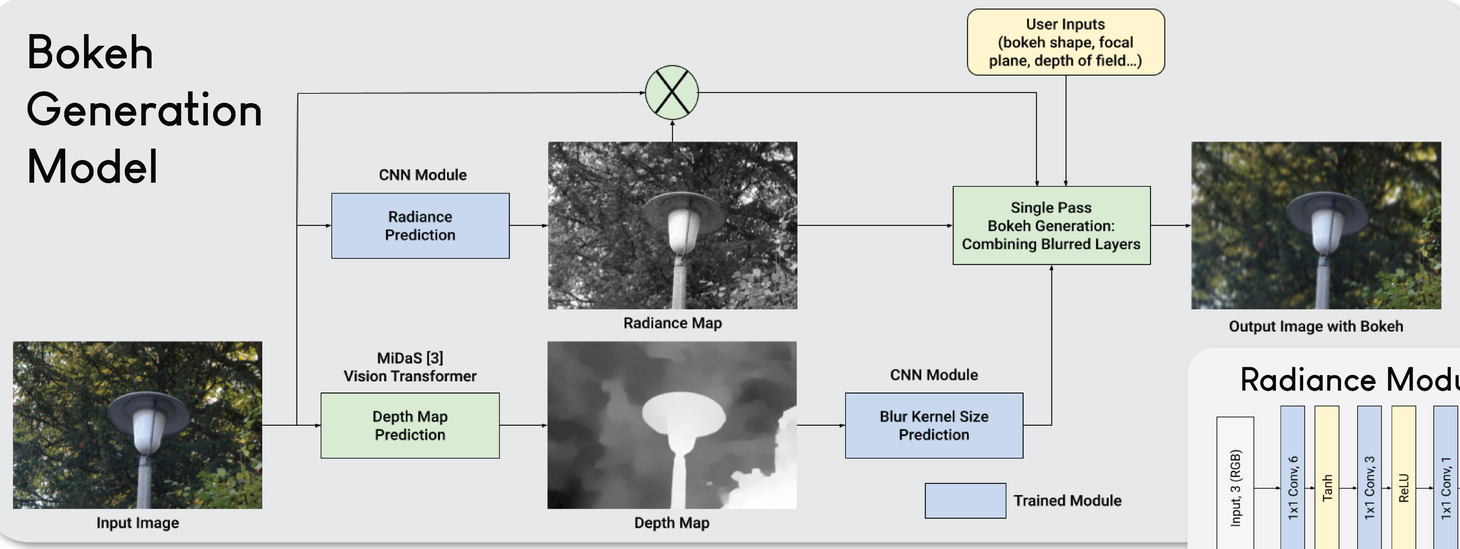
Many works due to the many applications

Baseline: DMSHN [1]
- End-to-end model
- 2 modules of 3 encoder-decoders in cascade

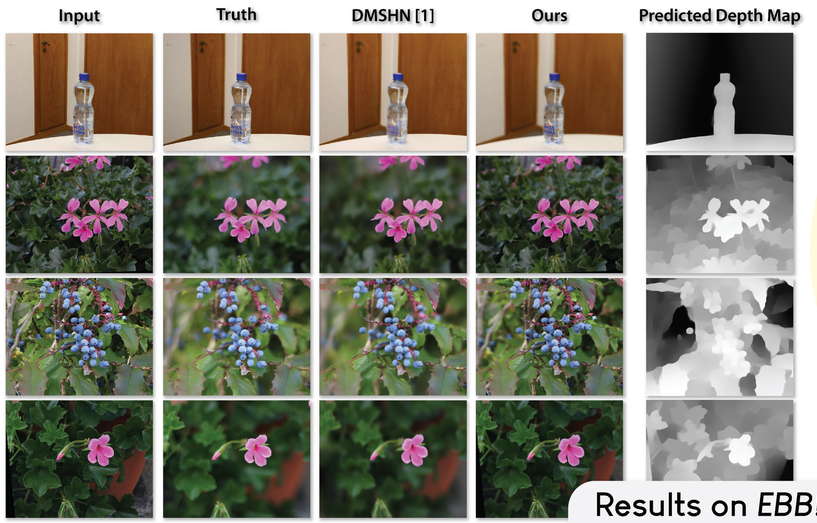
Dataset

Everything is Better with Bokeh! [2]
- 4.8k pairs of aligned photos (f/1.8 & f/16)
- Close-up of plants and street objects
- Slight color/contrast shifts

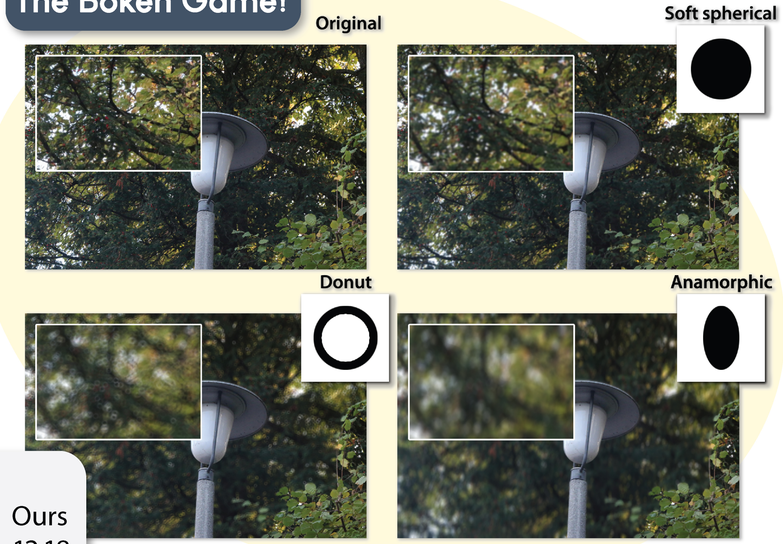
Bokeh Generation Model



Radiance Module



The Bokeh Game!



Results on *EBB!*

	DMSHN [1]	Ours
MAE	**8.33**	12.18
SSIM	**0.86**	0.83

Conclusion

- Performance vs Control
- The depth CNN module is ineffective. The transformer should be trained jointly.
- We are still waiting for a bokeh generator tool!

References

[1] S. Dutta et al., Stacked Deep Multi-Scale Hierarchical Network [...], 2021 [2] A. Ignatov et al., Rendering Natural Camera Bokeh Effect with Deep Learning, 2020 [3] R. Ranftl et al., Vision Transformers for Dense Prediction, 2021

Stanford University, CS231N