Create Bokeh for Stylized Photography

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

Bokeh Generation Model
- CNN Module
  - Radiance Prediction
- Radiance Module
  - Single-Pass Bokeh Generation: Combining Blurred Layers
  - User Inputs
    - (bokeh shape, focal plane, depth of field, ...)
- Depth Map Prediction
- Output Image with Bokeh

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

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!

La La Land, L. Sandgreen (2016)

Moonlight, J. Laxton (2016)

References