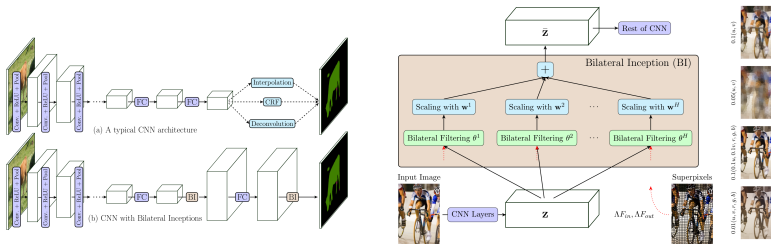


Superpixel Convolutional Networks using Bilateral Inceptions

R. Gadde, V. Jampani, M. Kiefel, D. Kappler, and P. V. Gehler (ECCV 2016)



- ▶ Adding bilateral filtering to CNNs for semantic segmentation: "Bilateral Inception" (BI)
- ▶ Idea: Pixels that are spatially and photometrically similar are more likely to have the same label.
- ▶ End-to-end learning of feature spaces for bilateral filtering and other parameters
- ▶ Standard bilateral filters with Gaussian kernels, at different feature scales
- ▶ Information propagation between (super) pixels while respecting image edges
- ▶ Full resolution segmentation result from the lower resolution output of a CNN
- ▶ Inserting BI into several existing CNN architectures before/after the last 1×1 convolution (FC) layers
- ▶ Improved results on Pascal VOC12, Materials in Context, and Cityscapes datasets
- ▶ Better and faster than DenseCRF