

# Appendix for “Learning Neural Eigenfunctions for Unsupervised Semantic Segmentation”

Zhijie Deng  
Shanghai Jiao Tong University  
Shanghai, China  
zhijied@sjtu.edu.cn

Yucen Luo  
Max Planck Institute for Intelligent Systems  
Tübingen, Germany  
luoyucencen@gmail.com

## A. Extra Visualization Results

Figure 1 shows the learned neural eigenfunctions on Pascal Context. We clarify that the plots correspond to the outputs of the neural eigenfunctions under standard  $[0, 1]$  normalization (bilinear up-sampling is also used). Softmax transformation is not applied. We see that different eigenfunctions respond to different input patterns actively. Combining them is obviously beneficial to solving edge detection and image segmentation problems.

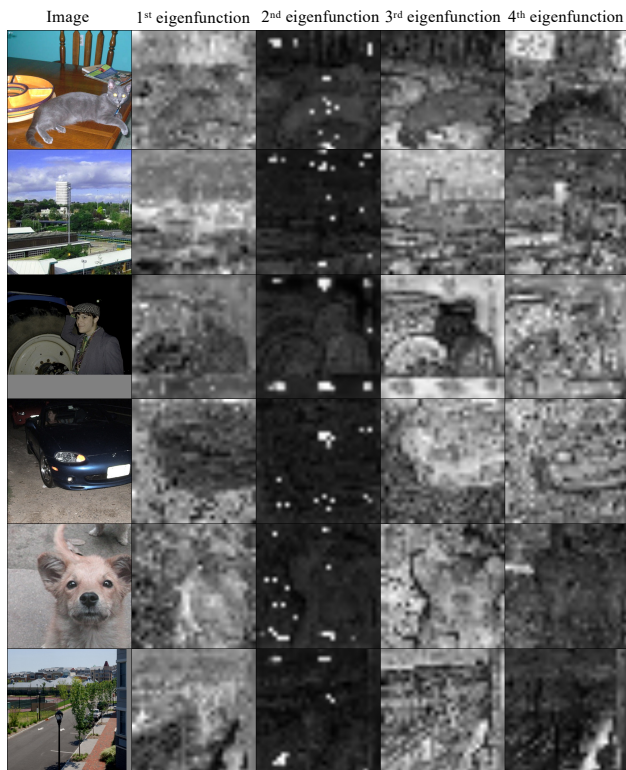


Figure 1. Visualization of the learned neural eigenfunctions on Pascal Context.

Figure 2 shows some qualitative results of the proposed

methods on Cityscapes. Notably, our method can detect multiple semantic categories in the same image and the generated object boundaries are sharp.

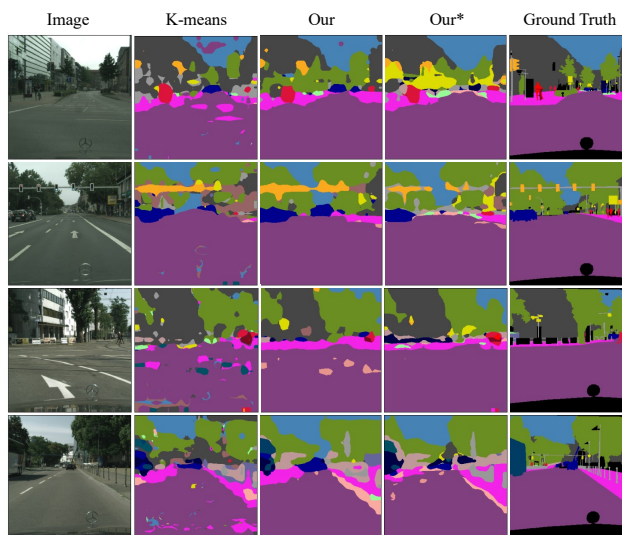


Figure 2. Visualization of the unsupervised semantic segmentation results on Cityscapes.