

Object-level Correlation for Few-Shot Segmentation

Supplementary Material

Chunlin Wen¹, Yu Zhang¹, Jie Fan², Hongyuan Zhu⁴, Xiu-Shen Wei¹,
Yijun Wang¹, Zhiqiang Kou¹, Shuzhou Sun^{3,5}

¹School of Computer Science and Engineering, Southeast University

²Samsung Electronics (China) R&D Centre ³Shanghai AI Laboratory

⁴Institute for Infocomm Research (I2R), A*STAR Singapore 138632

⁵Center for Machine Vision and Signal Analysis (CMVS), University of Oulu

A. Additional results and analyses

Table 6. Ablation studies on the number of the general object prototype.

N_g	Fold0	Fold1	Fold2	Fold3	Mean
3	72.8	75.7	70.4	64.7	70.9
5	73.0	75.8	71.0	65.0	71.2
7	73.5	75.9	71.1	64.9	71.4
9	72.6	75.7	70.4	64.4	70.8
11	72.7	75.8	70.4	64.2	70.8

Table 7. Ablation studies on the number of frequency prototype.

N_s	Fold0	Fold1	Fold2	Fold3	Mean
3	72.6	75.6	70.5	65.3	71.0
4	72.6	75.8	70.2	64.7	70.8
5	73.5	75.9	71.1	64.9	71.4
6	73.4	75.7	70.8	64.8	71.2
7	72.8	75.7	70.3	64.6	70.9

Number of the General Object Prototype The general object prototype P_g is introduced to learn the general object information in GOMM during the training stage. We conduct ablation experiments to analyze how many general object prototypes are better for object learning. As reported in Table 6, using more prototypes can gradually improve the performance until the number N_g achieves 7. Then, the performance improves no longer and even drops (71.4% vs. 70.8%). We ascribe this phenomenon to the redundant learned parameters from the more prototypes. Therefore, we use 7 general object prototypes in our model.

Number of Support Prototype The support prototype P_s is the pivotal component in providing the support information for the correlation construction in CCM. To show the impacts of different prototype numbers, we employ 3-7 prototypes for experiments in Table 7. As shown in the table, our model performs best when N_s is set to 5. Further increasing N_s does not significantly improve performance. It suggests that we extract more effective prototypes in this setting. So, we set N_s to 5 for our model.