

Supplementary Materials of “Graph-Based Social Relation Reasoning”

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1 Pipeline

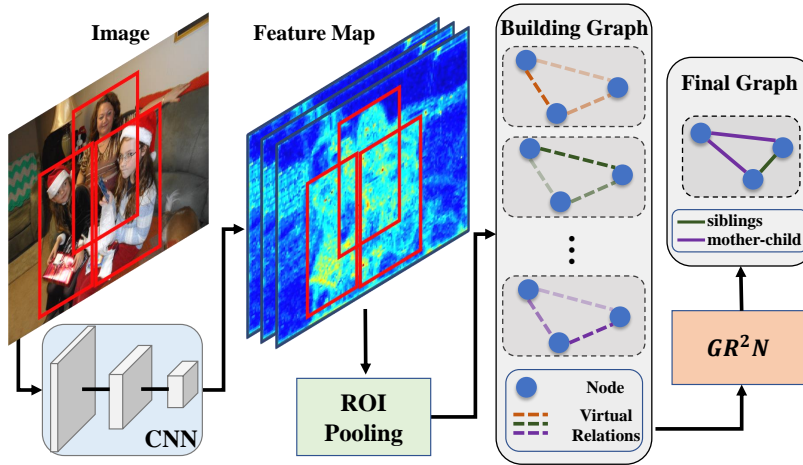


Fig. 1. An overall pipeline of our proposed method. For a given image, we first use a CNN to extract features. Then the features of people in the image are obtained from the last shared feature map using an RoI pooling layer. These features are set as the initial node embeddings. Several virtual relation graphs with shared node representations are constructed to exploit type-specific logical constraints. Finally, the proposed GR^2N is used to generate a reasonable and consistent social relation graph.

Fig. 1 depicts the overall pipeline of our proposed GR^2N .

[†] Work done while at Tsinghua University.

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2 Convergence

To show the convergence of our method, we list the numerical results of GR²N on the PIPA dataset in Table 1. We observe that our method eventually converges.

Table 1. We show how the loss function value of our method changes during the training stage as the number of iterations increases.

Iters	0	10	50	100	500	1000	5000
Loss	0.676	0.520	0.374	0.258	0.144	0.102	0.087