

Scene Understanding

4 Graph Neural Networks

Scene Understanding

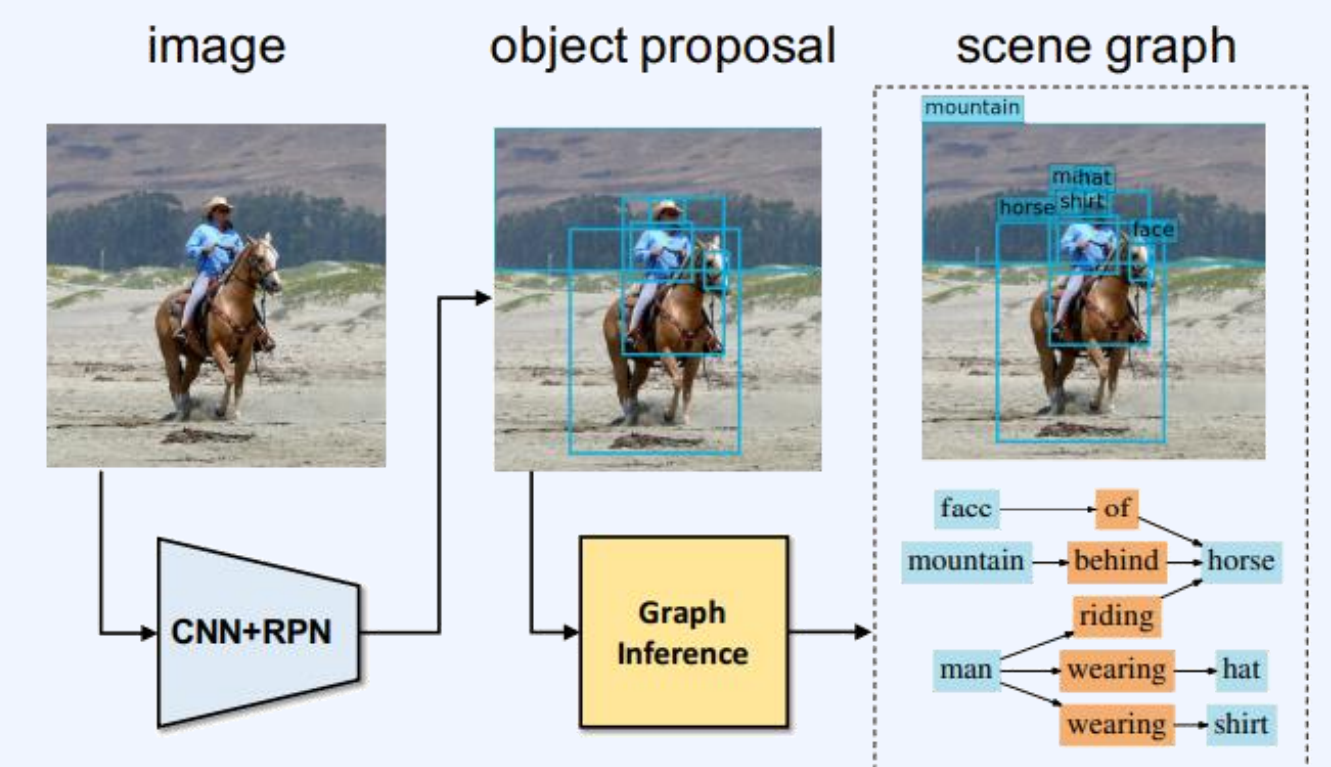
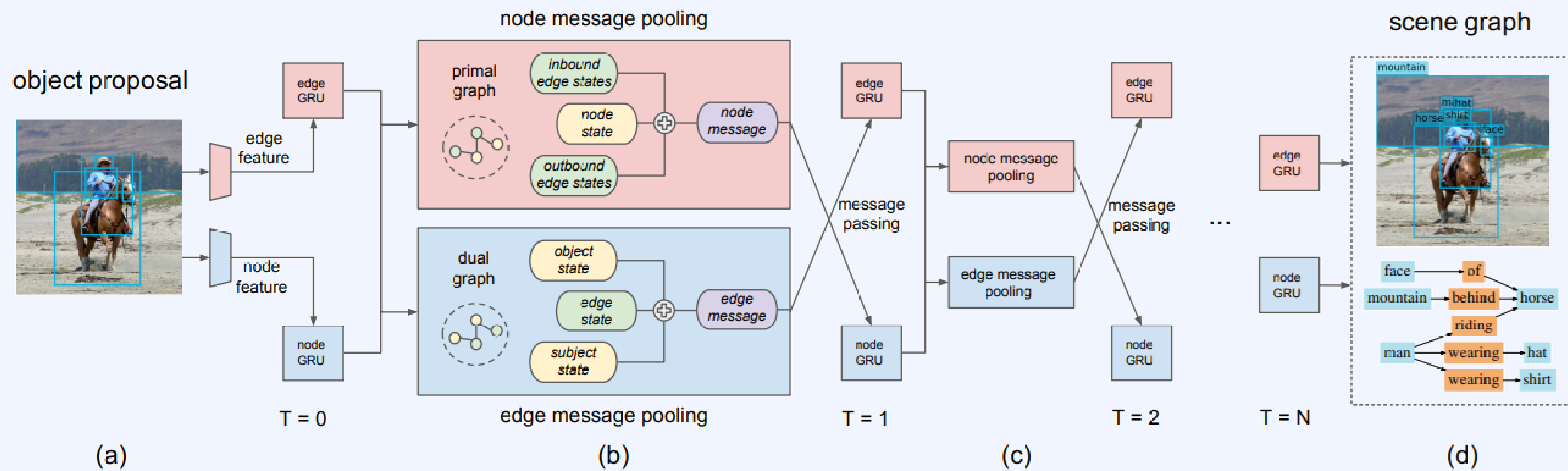
Graph Neural Networks for High-level Computer Vision

4.

GNNs
For Scene Graph

D. Xu et al. Scene Graph Generation by Iterative Message Passing. CVPR

GRU-based



Scene Understanding

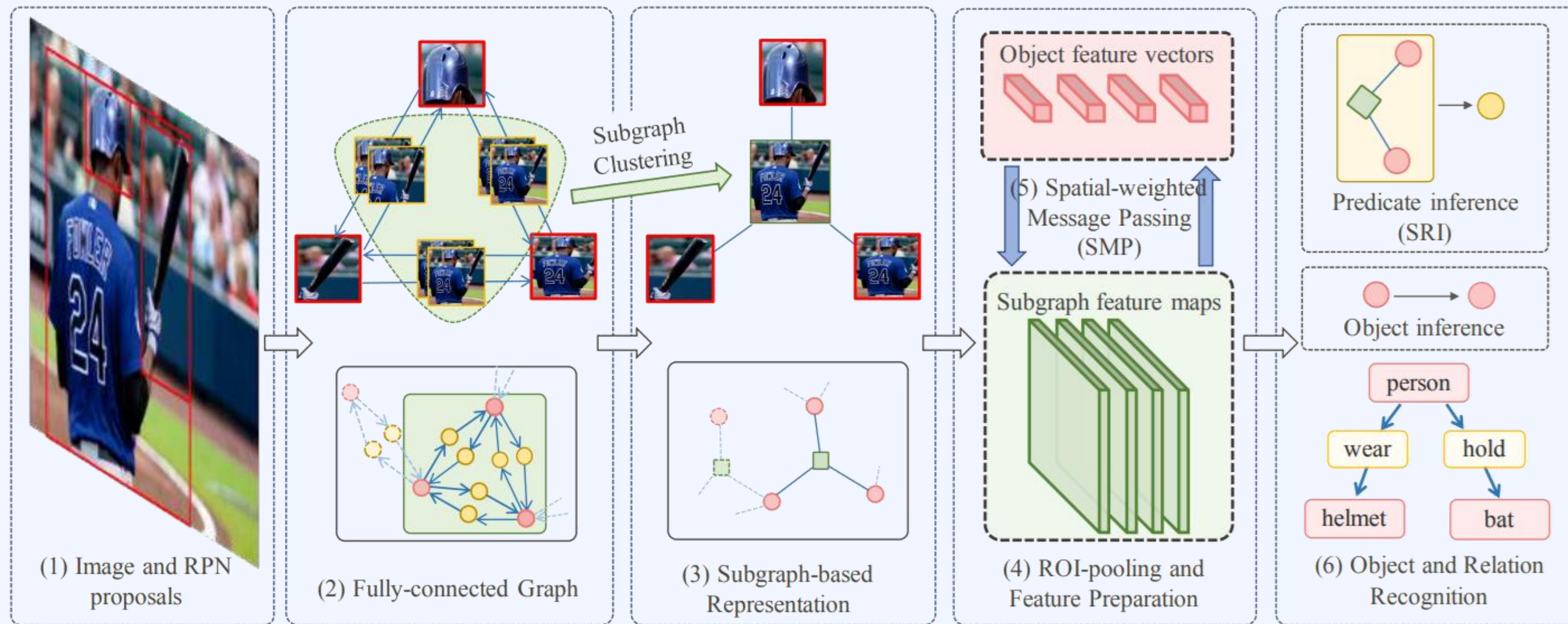
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For Scene Graph

Y. Li et al. Factorizable Net: An Efficient Subgraph-based Framework for Scene Graph Generation. ECCV

F-Net



Scene Understanding

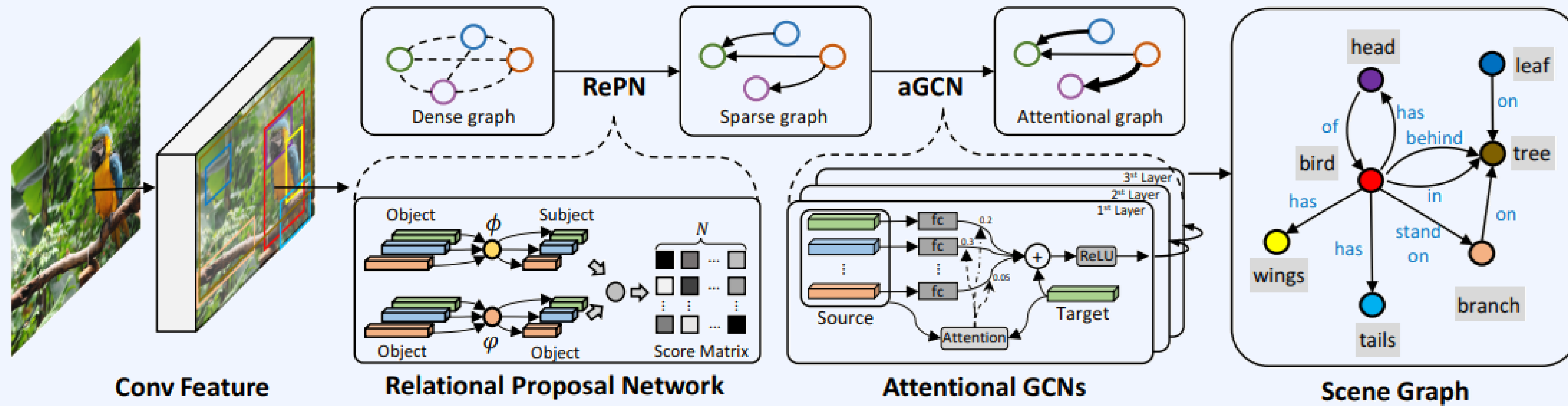
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GNNs
For Scene Graph

J. Yang et al. Graph R-CNN for Scene Graph Generation. ECCV

Graph R-CNN



$$P(\mathcal{S}|\mathbf{I}) = \underbrace{P(\mathbf{V}|\mathbf{I})}_{\text{Object Region Proposal}} \underbrace{P(\mathbf{E}|\mathbf{V}, \mathbf{I})}_{\text{Relationship Proposal}} \underbrace{P(\mathbf{R}, \mathbf{O}|\mathbf{V}, \mathbf{E}, \mathbf{I})}_{\text{Graph Labeling}}$$

Scene Understanding

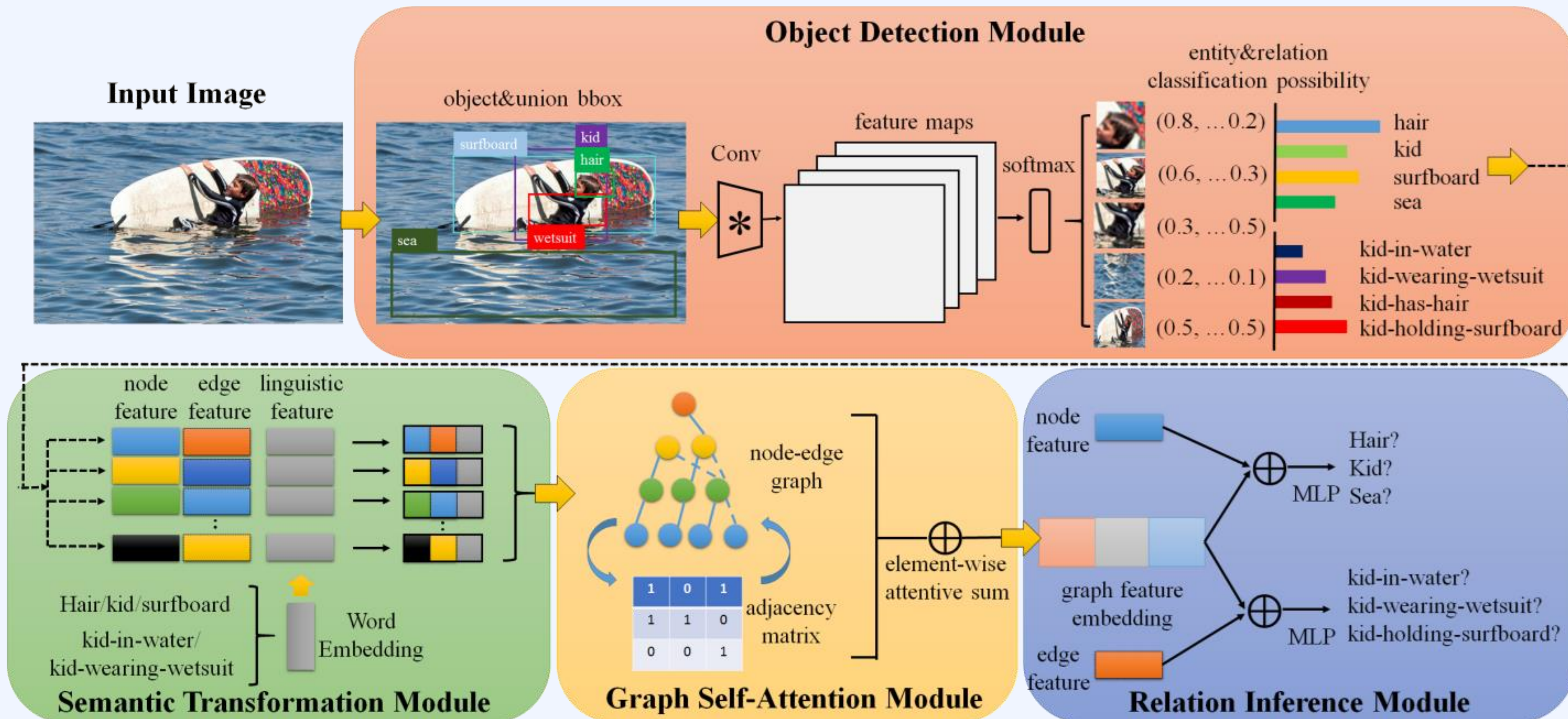
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M. Qi et al. Attentive Relational Networks for Mapping Images to Scene Graphs. CVPR

ARN



Scene Understanding

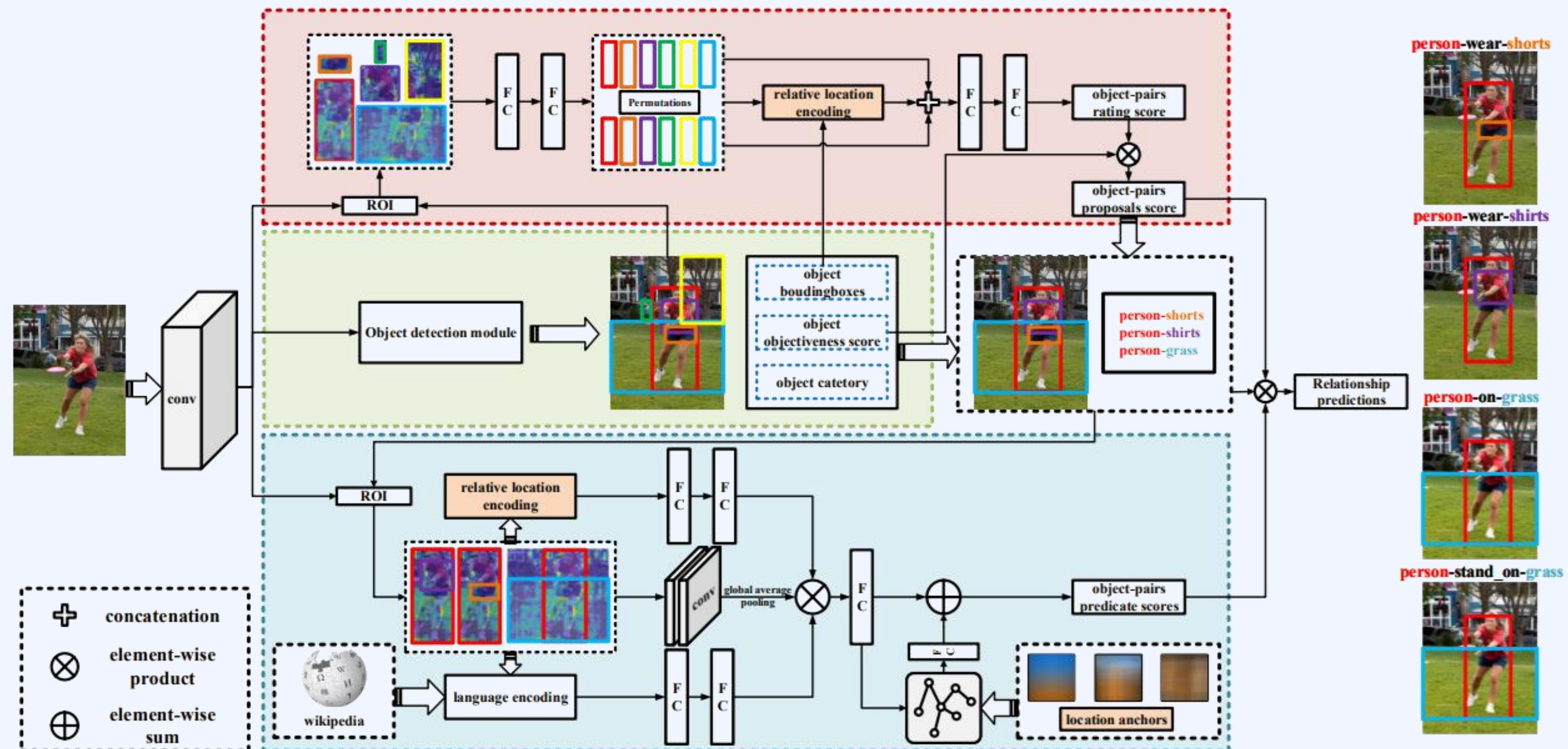
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H. Zhou et al. Visual Relationship Detection with Relative Location Mining. ACM Multimedia

GGNN



Scene Understanding

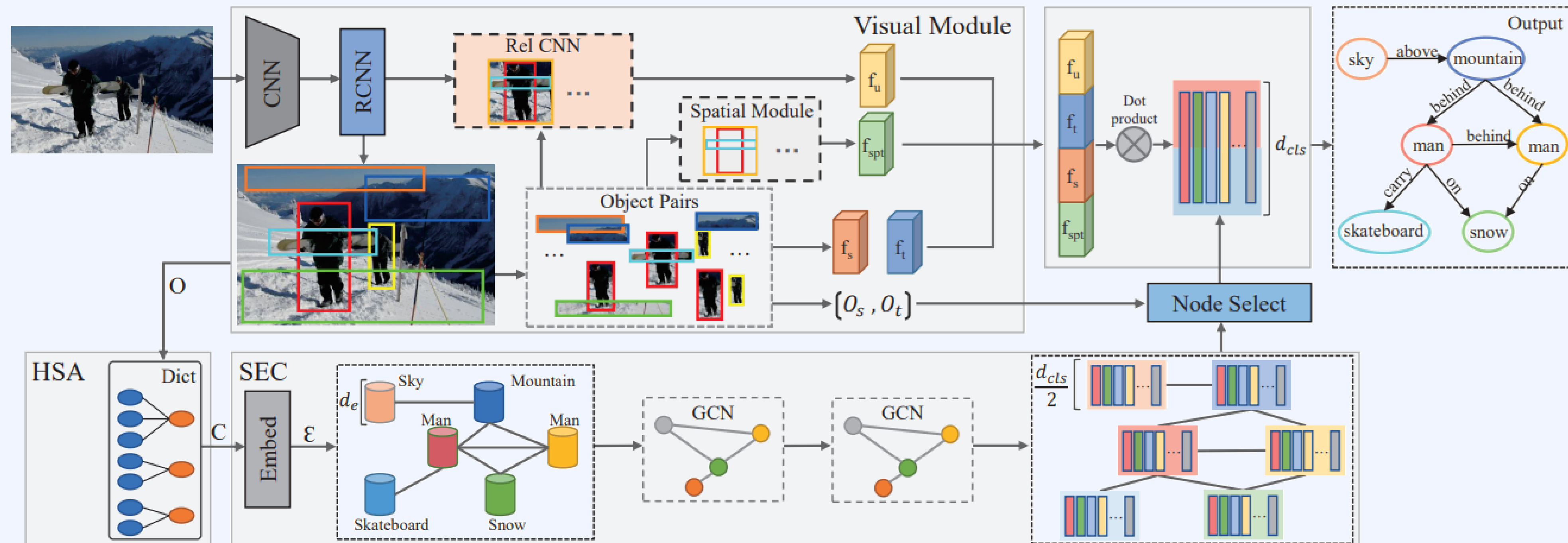
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M. Wei et al. Hose-net: Higher order structure embedded network for scene graph generation. ACM Multimedia

Hose-Net

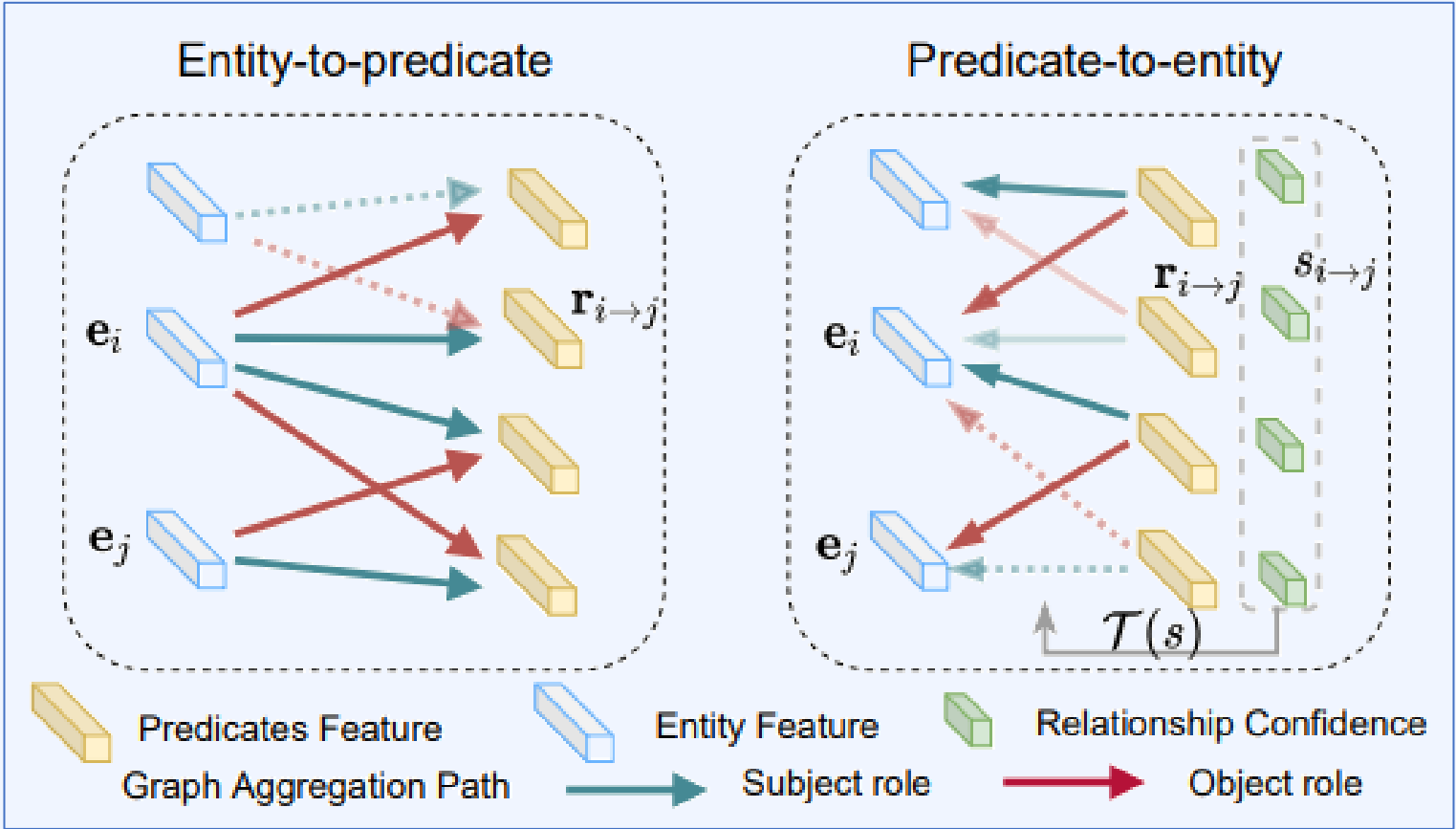
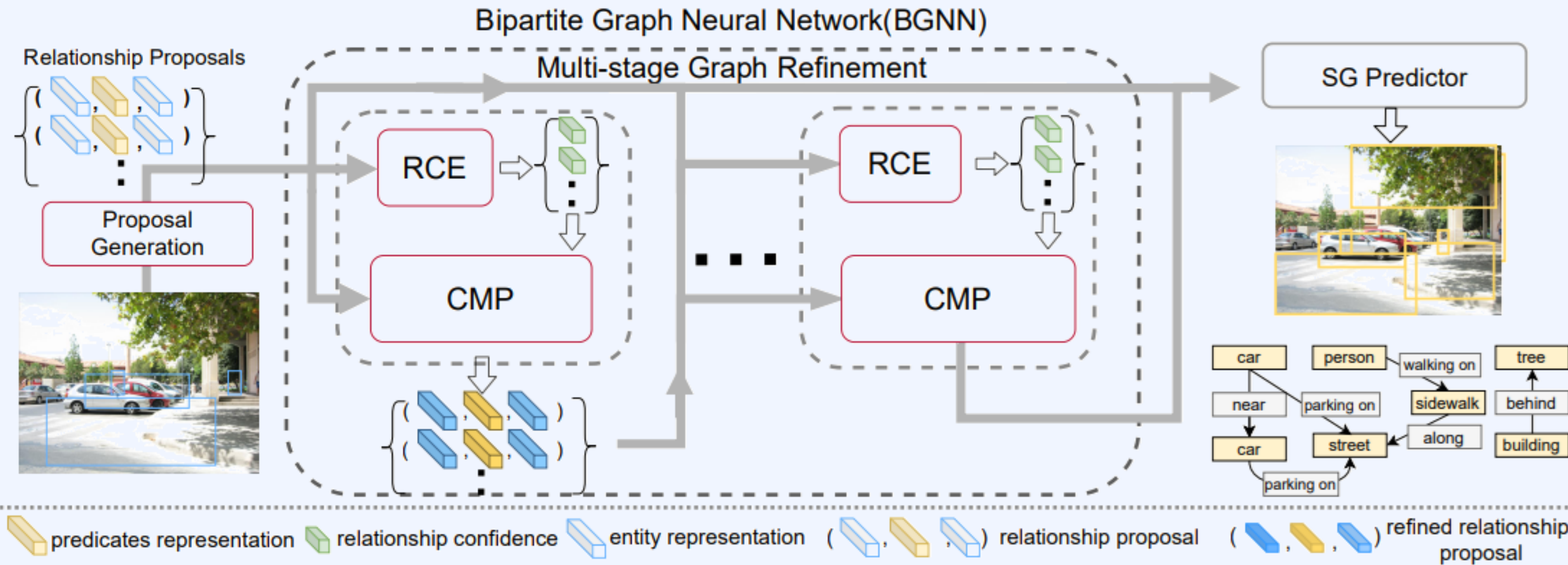


Scene Understanding

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R. Li et al. Bipartite Graph Network with Adaptive Message Passing for Unbiased Scene Graph Generation. CVPR

BGNN



Scene Understanding

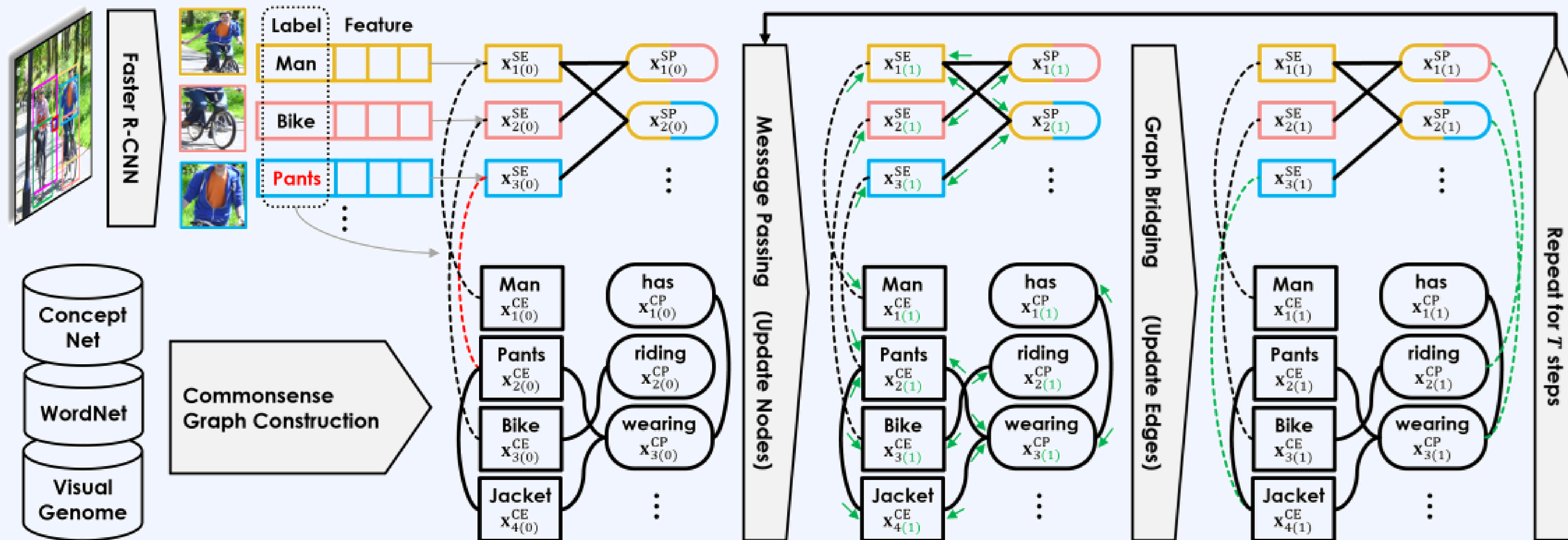
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A. Zareian et al. Bridging Knowledge Graphs to Generate Scene Graphs. ECCV

GB-Net



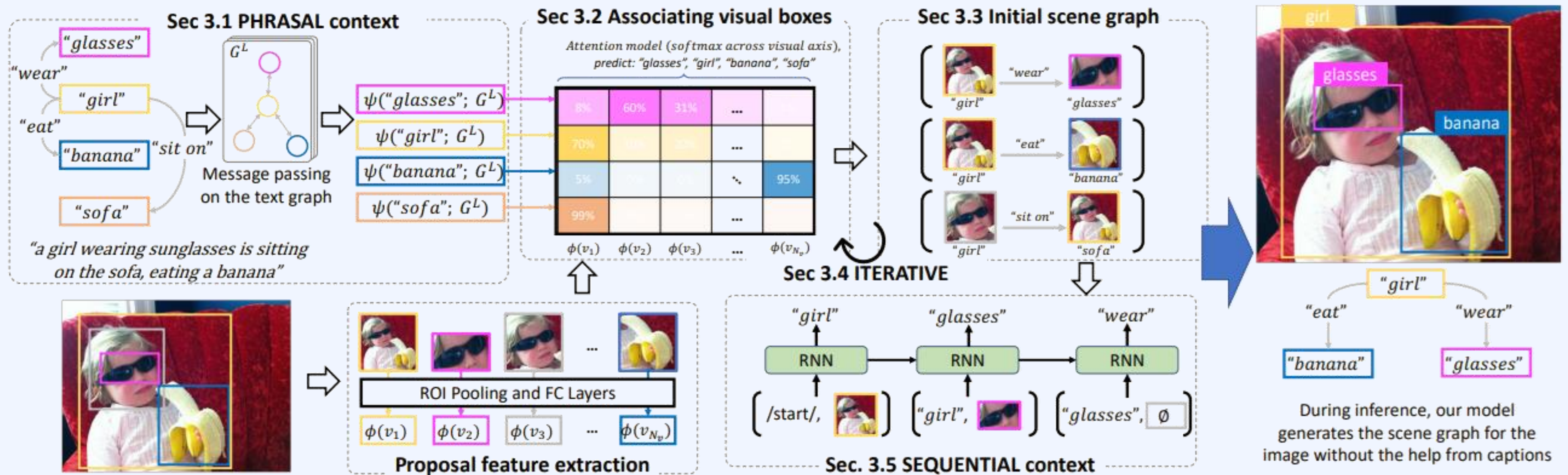
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K. Ye et al. Linguistic Structures as Weak Supervision for Visual Scene Graph Generation. CVPR



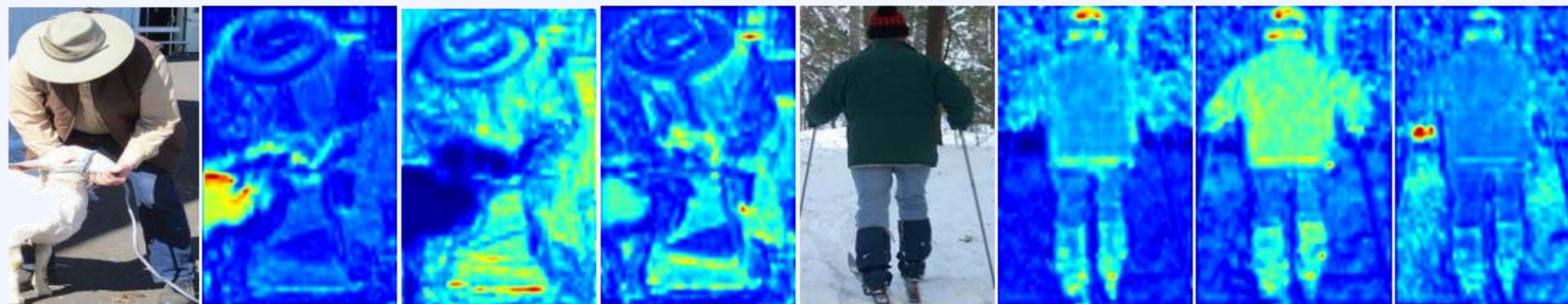
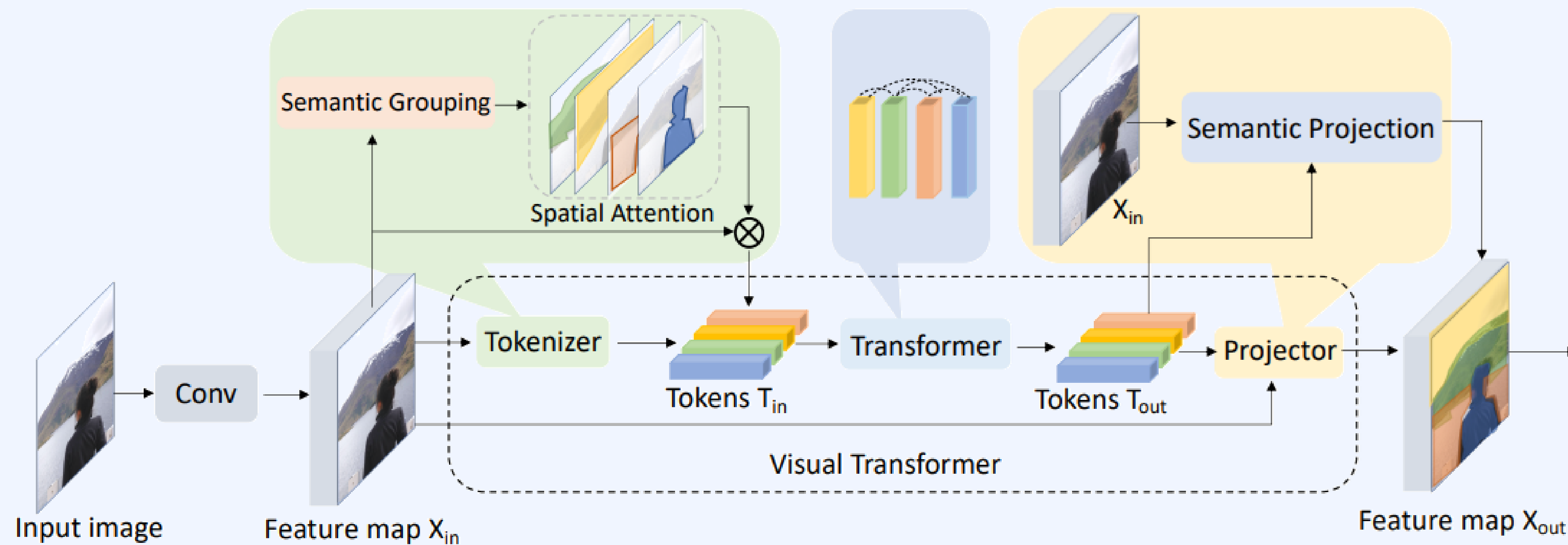
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B. Wu et al. Visual transformers: Token-based image representation and processing for computer vision. arXiv preprint arXiv:2006.03677



Scene Understanding

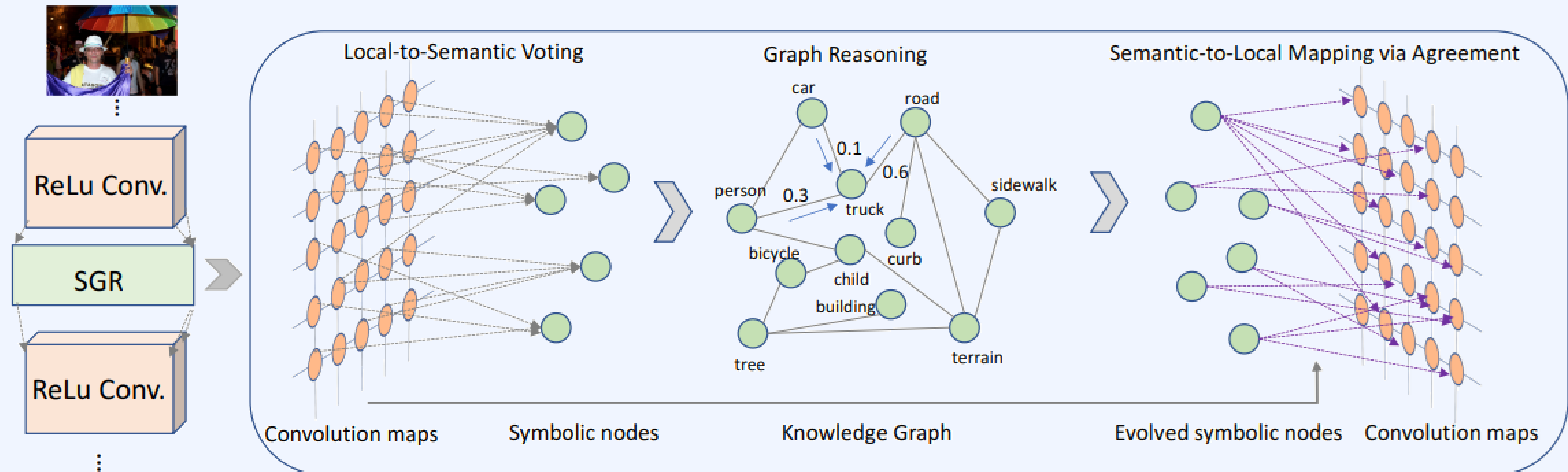
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X. Liang et al. Symbolic Graph Reasoning Meets Convolutions. NeurIPS

SGR



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X. Liang et al. Symbolic Graph Reasoning Meets Convolutions. NeurIPS

SGR

