



Depth-Aware Layered Edge for Object Proposal

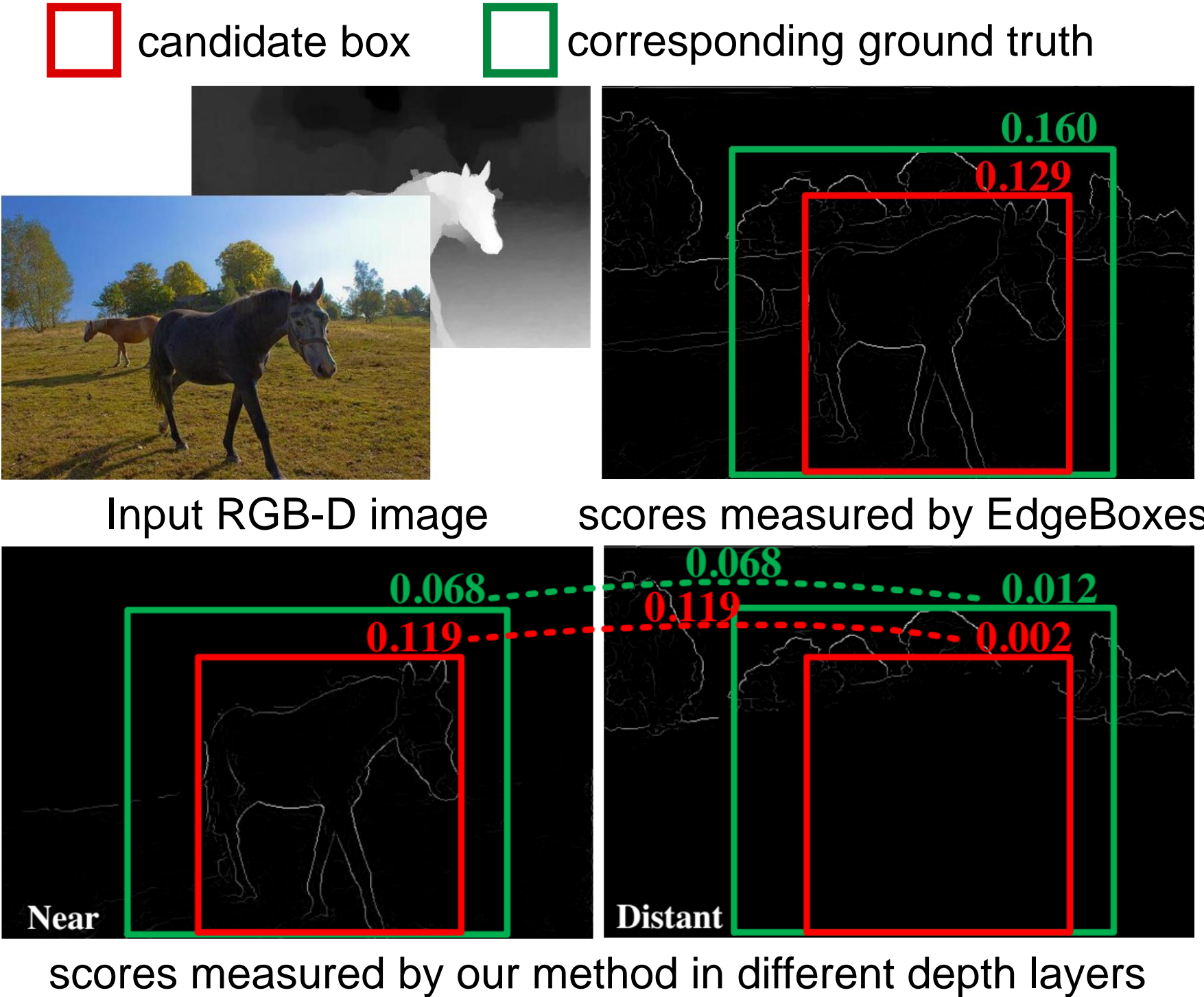
Jing Liu, Tongwei Ren, Bing-Kun Bao, Jia Bei

Introduction

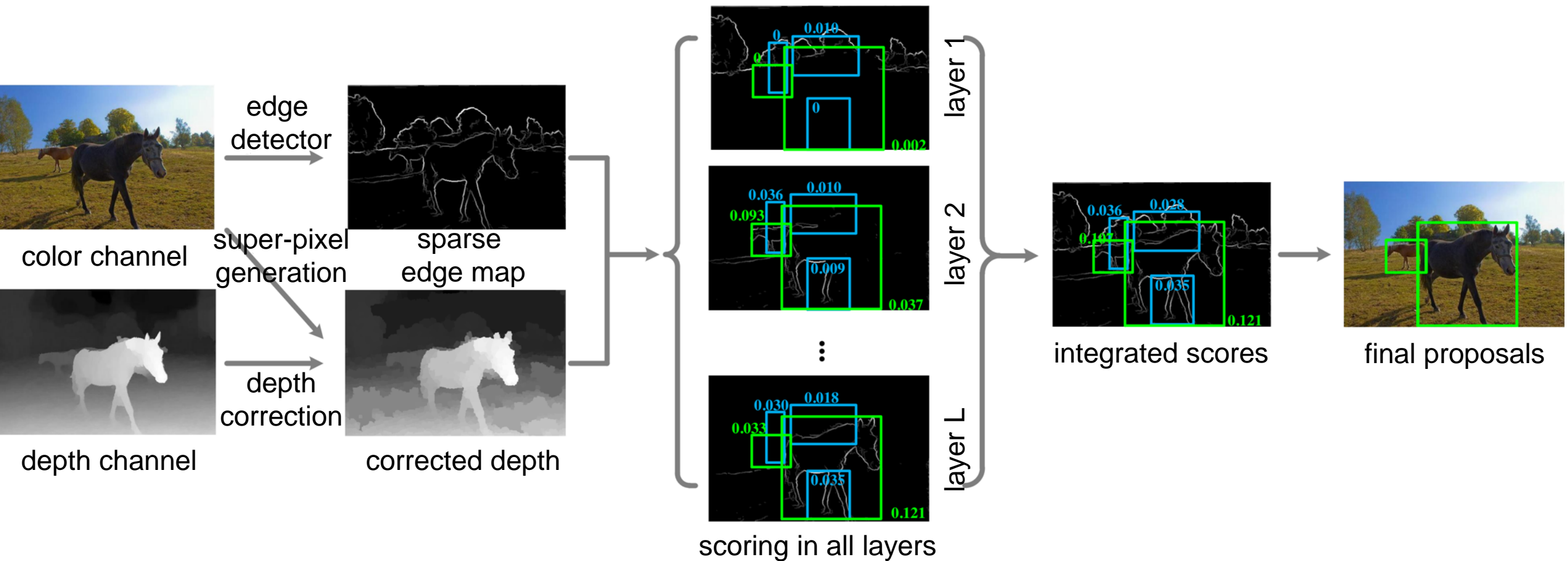
Object proposal aims to detect the bounding boxes of class-independent objects in an image.

Current edge-based object proposal methods **cannot discriminate the edges from objects and background**, which may lead to inaccuracy in objectness measurement.

We propose a novel object proposal method for **RGB-D images** based on **layered edges**.



Method



Sparse edge detection

- Structured edge detector with No-Maximal Suppression

Depth correction

- Eliminate the influence of inaccurate boundaries and noises in depth channel

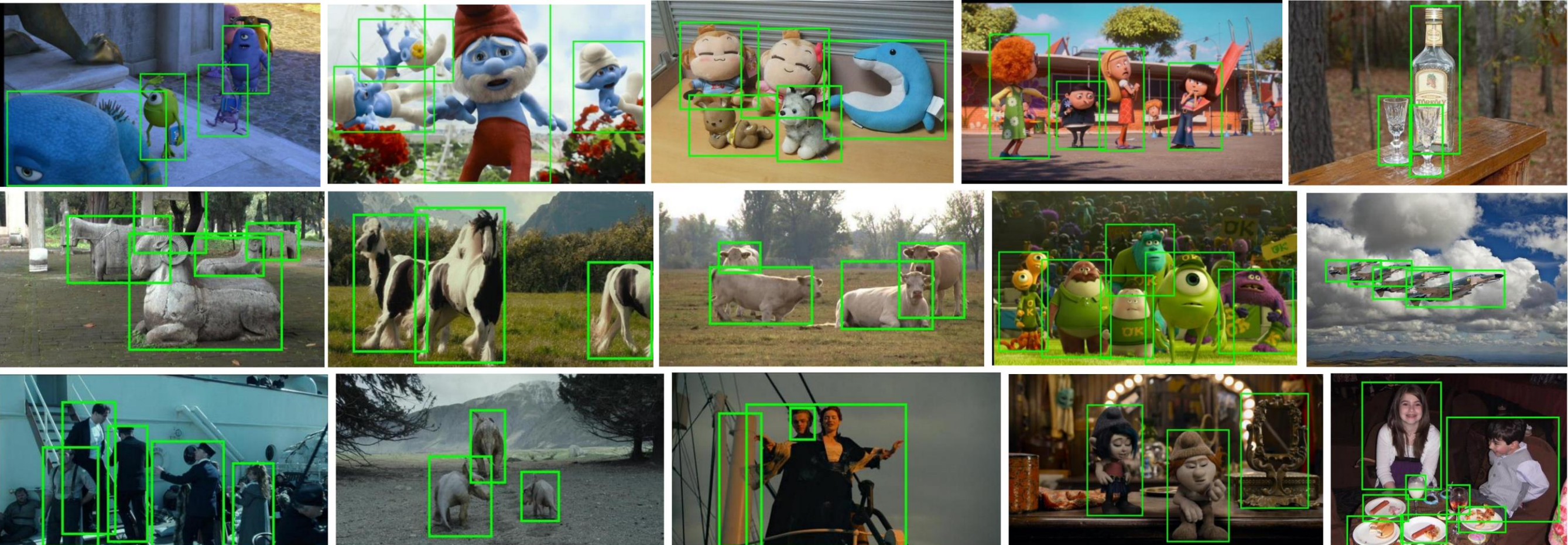
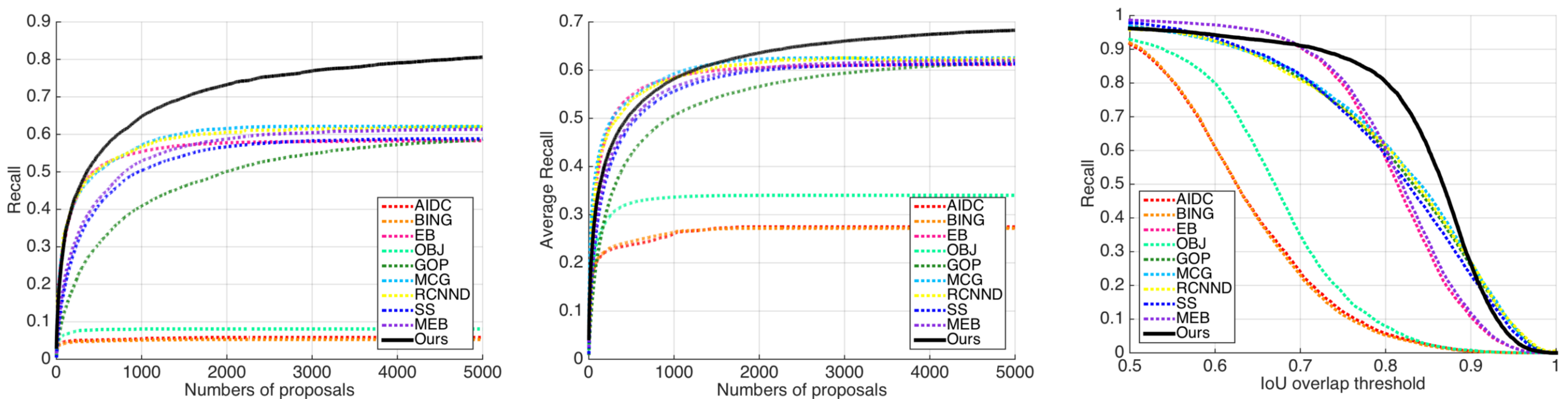
Depth-aware layered edges

- Assign the sparse edges to multiple layers by adaptive sliding window
- Measure the objectness of candidate boxes on each layer based on the corresponding edges independently

Proposals ranking

- Sample the candidate boxes and measure their objectness on each layer independently
- Integrate the scores of each candidate box on all the layers

Experiment



Conclusion

We propose an effective object proposal method RGB-D for images based on layered edges

- Edge map is layered with adaptive sliding window according to the corrected depth channel
- Objectness is independently measured on all the layers and then integrated to generate the proposals

Contact to: rentw@nju.edu.cn

