Related Works

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1 Computer vision approach

- CV only approaches: graph cuts, CRFs - hybrids: supervised segmentation Interactive segmentation methods are often used when automated algorithms do not provide a fine enough level of segmentation for the desired application, or merging oversegmented regions.

2 Continous extensions to Welinder et al

[1] examines the binary case of image labelling. multi-choice

3 Problems with existing approaches

- Existing work quality metrics does not *generate* a best segmentation region, it identifies the best segmentation as the best-scored annotations, thus requiring a large pool of candidate annotation to chose from. Consider an extreme scenario where we have two user annotation of a dumbbell, user 1's gives a perfect annotation of the left side of the dumbell and horrible annotation of the right side, and user 2 gives the perfect annotation of the right but not the left. We want a cost-effective model where the best annotations each worker's annotation are preserved and each worker improves the "ground-truth" annotation. Ultimately, we are interested in obtaining instance-level segmentation by combining the worker responses, rather than how good each worker are.

References

[1] Peter Welinder, Steve Branson, Serge Belongie, and Pietro Perona. The Multidimensional Wisdom of Crowds. *NIPS (Conference on Neural Information Processing Systems)*, 6:1–9, 2010.