Detecting People Using Mutually Consistent Poselet Activations*
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Goals and Contributions
• Best person detection/segmentation on RASCAL VOC 07-09
• New poselet selection algorithm to maximize coverage on the training examples
• Improved detections using neighboring detections of other poselets
• Saliency based agglomerative clustering for generating hypotheses
• Integrating both top-down and bottom-up information for segmentation
• Large scale 2D annotations done on Amazon Mechanical Turk

Comparison to Felzenszwalb et al.[1]

From annotations to poselets
1. Randomly sample patches as seeds
2. Find corresponding patches using keypoint configurations
3. Train poselets (linear SVMs based on HOG features)
4. Select poselets based on maximizing coverage of the training examples

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We use “100 parts that are nicely clustered in pose space. Poses always have visual meaning (“Frontal face”, “hand next to hip”).

1. Finding poselet activations
   Dots represent centers of poselet activations with size proportional to the detection score

2. Rescoring activations
   An example of an activation and its consistent neighbors

3. Clustering activations
   Each cluster represents a person hypothesis

4. Hypothesis generation
   Example bounds and segmentation

Which poselet activations are consistent?
• Consistent activations refer to the same object
• We measure consistency by thresholding the KL-divergence

Detection/Segmentation Results

Consistent Not Consistent

References
1. P. Felzenszwalb, R. Girshick, D. McAllester, D. Ramanan, Object Detection with Discriminatively Trained Part Based Models, PAMI’09

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