

# ICCV outline

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## 1 intro/related

- Dataset: Explain properties of the ADL dataset ( 200 video clips, 5 active/ 21 passive features, classification accuracy using Ramanan method (36% using leave one out, 33.87% mean accuracy with 100 50-50 train/test splits) Inclusion of active objects in the feature space increases classification accuracy. Dataset has been modified since publication; published code gives slightly lower accuracy relative to the published numbers (with 2 level pyramid and active/passive features: 36.89% vs 40% published number).
- Boosting: Results in the context of Viola-Jones.  
Drew inspiration from randomized spatial partition (Jiang, Yuan) in 2 dimensions for images.
- Maybe discuss some other egocentric papers?

## 2 approach

- Attempt to generalize the approach of Jiang, Yuan to 3 dimensions.
- Train weak svm classifiers, boost into strong classifier. 30 rounds of boosting.
- First try: Uniformly distributed randomized cut planes, independently rotated.
- Bias the cut planes according to counts of detected objects. Cutting through regions that tend to contain active objects tends to be more discriminative than unbiased cuts, which in turn tend to be more discriminative than biased cuts around active object regions.

- Second implementation: KD-tree representation of pyramids. Faster computation, but cut planes are no longer rotated.

### 3 results

- Discussion of which partitions tend to get selected (3 level pyramids are preferred over 2 level pyramids). Todo: evaluate whether 4 level pyramids tend to be chosen over 3 level.
- megapool accuracy over 10 splits: 33.57% (0.3% less than Ramanan's)
- Todo: megapool accuracy over more splits;
- Todo: gigapool accuracy (should be size roughly 5000)
- Todo: beat Ramanan's accuracy!