

# Learning background segmentation offline

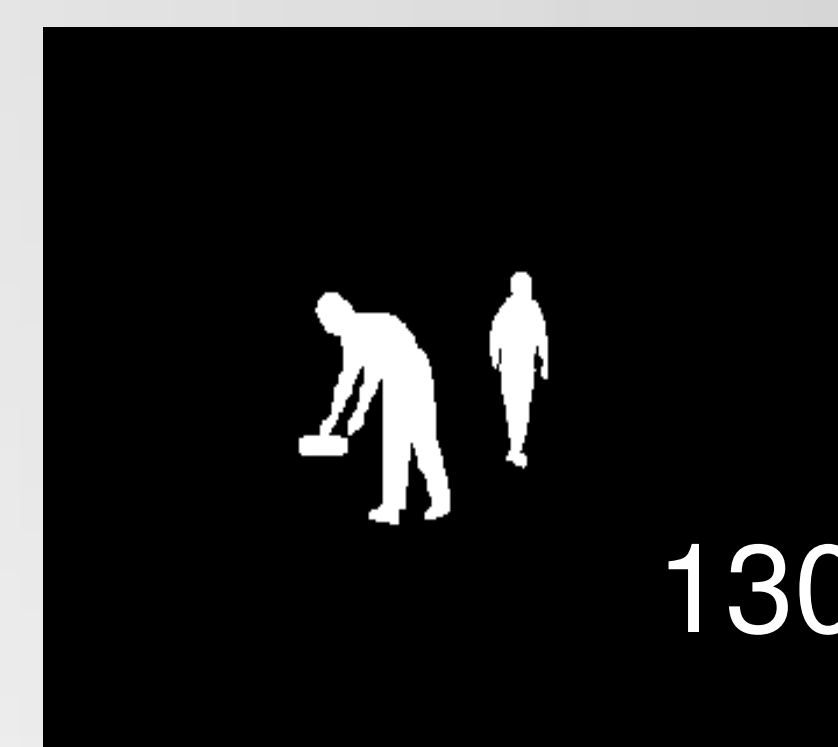
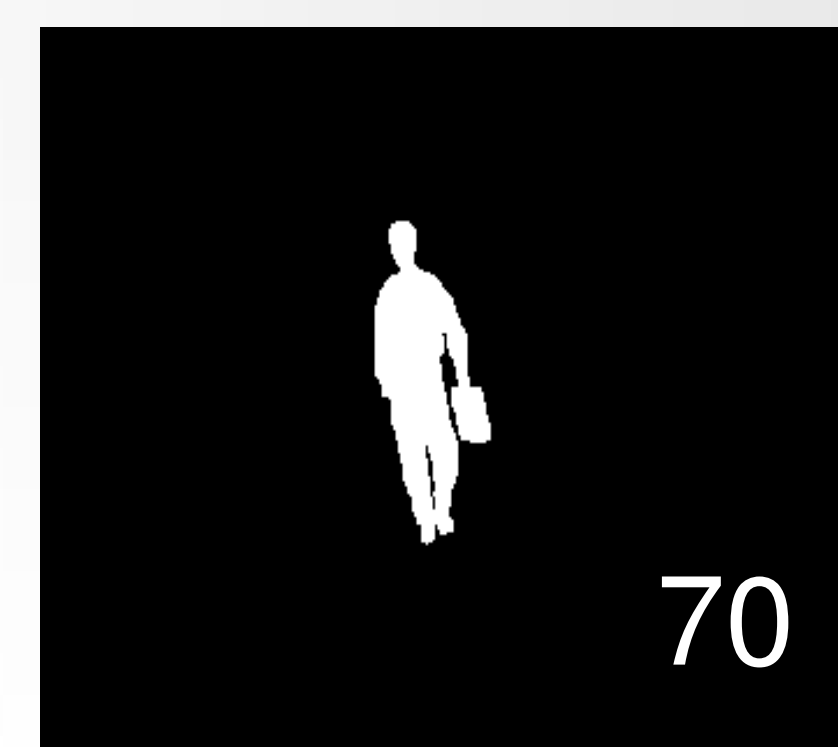
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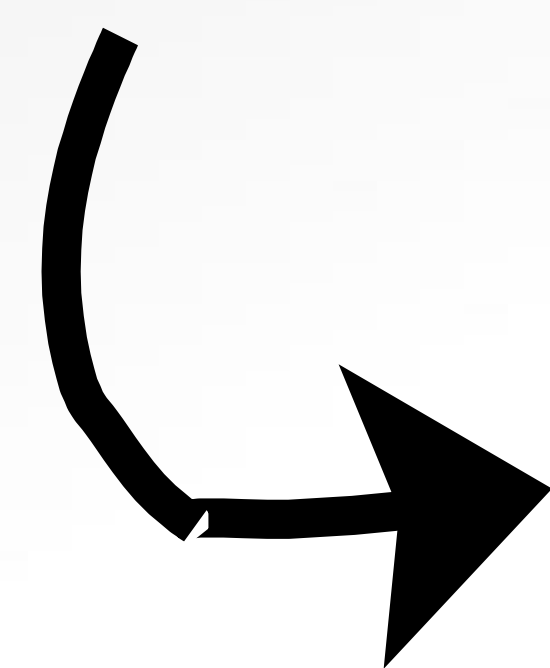
Center for Visualization, U. of Kentucky

Not a background subtraction method!  
A user provides labeled examples, so this is not a practical online setting. however...

Idea: Given images and a few labels ...



... train a classifier to label the whole sequence.



Advantage: Explicitly say what is FG.  
No implicit hard-coded definition.

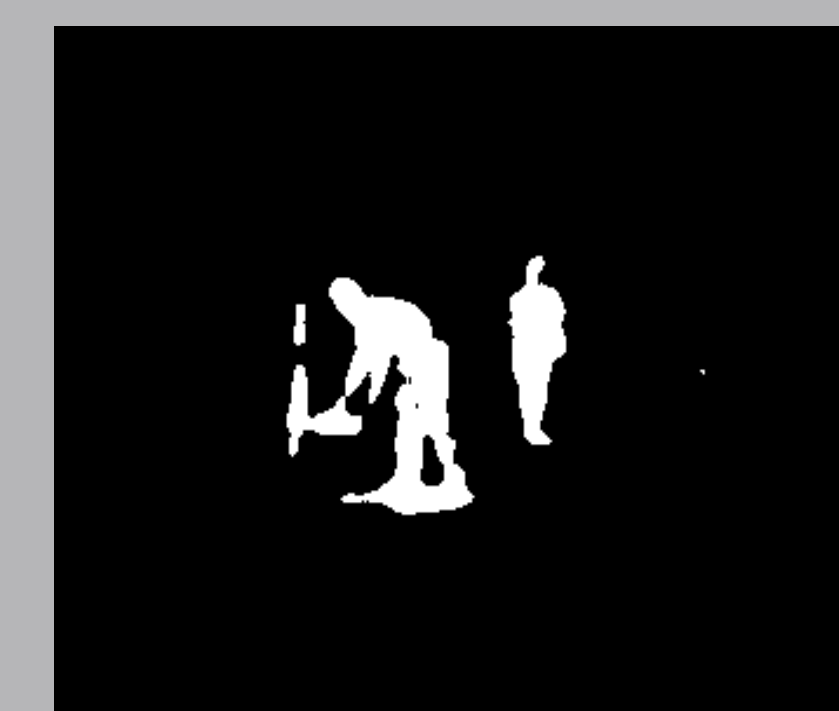
In practice: use Adaboost to build a combination of thresholded image filters.

RGB kernel  
proba. img.

$I > 12$

$I > 128$

$I > 200$



Other filters:

Spatio-temporal

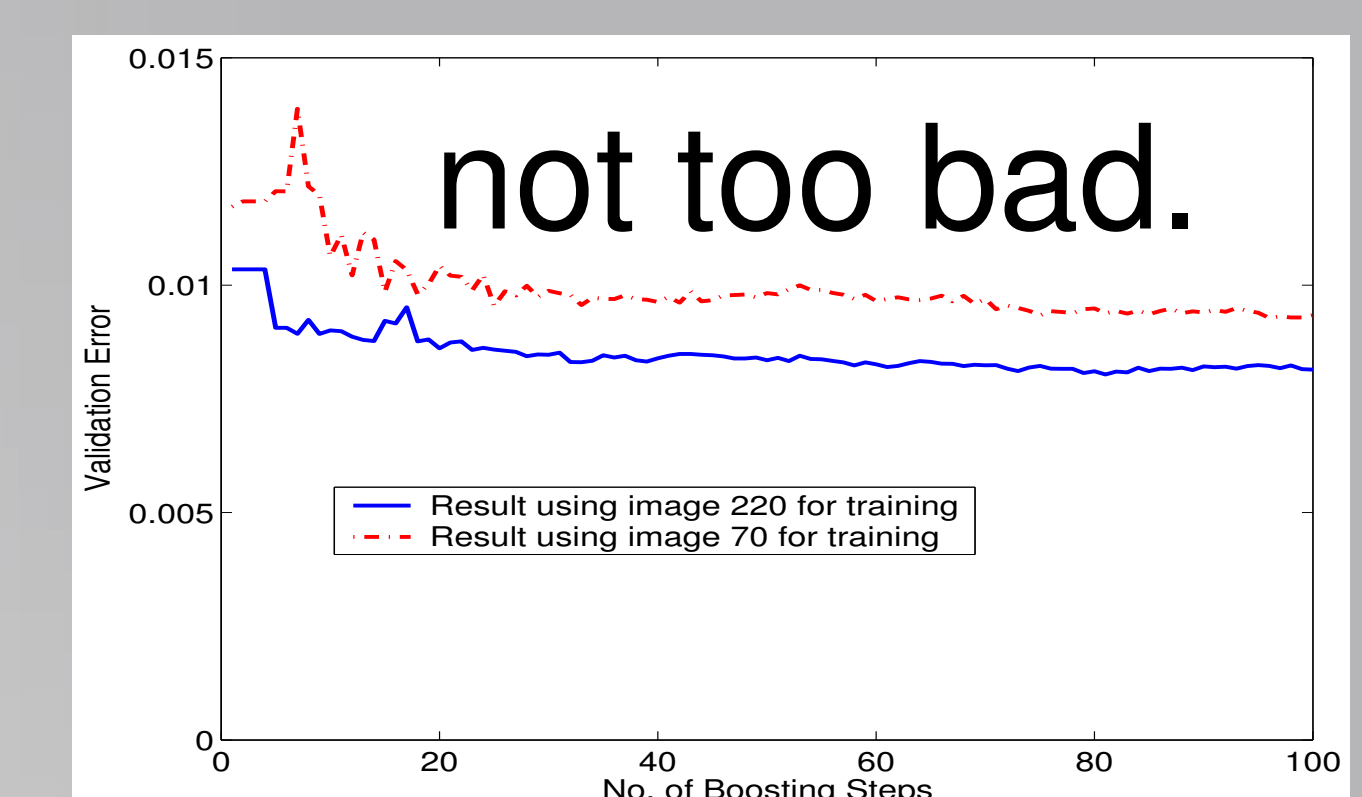
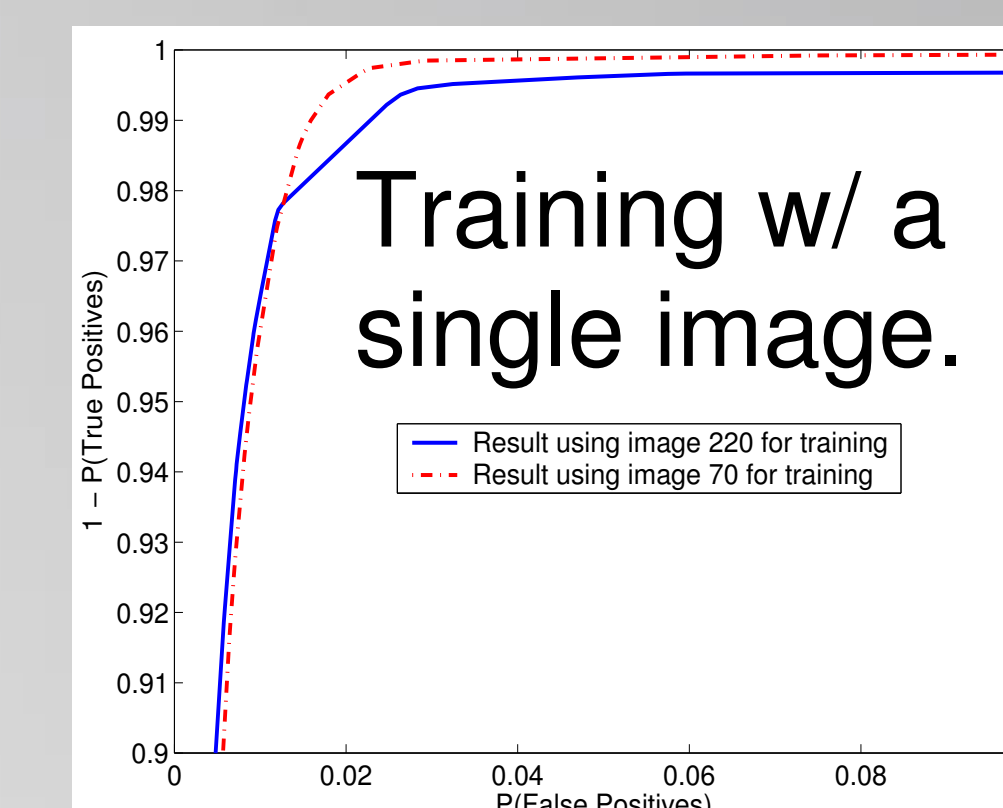
correlation



Post-processing weak classifier: morphological open, close, erode & dilate.

Altogether: 50–100 weak classifiers.

How well does it work?



Which classifiers are used?

Family	Kernel				Spatio Temporal			Corr.	Morph.
	RGB	HSV	HS	LOG	RGB	HS	V	RGB	-
Number	24	15	14	12	6	5	4	0	20
Weights (%)	23.3	14.9	5.8	9.2	2.0	2.9	1.3	0	40.7
Total Num.	65				15			0	20
T. Wgt. (%)	53.2				6.2			0	40.7

