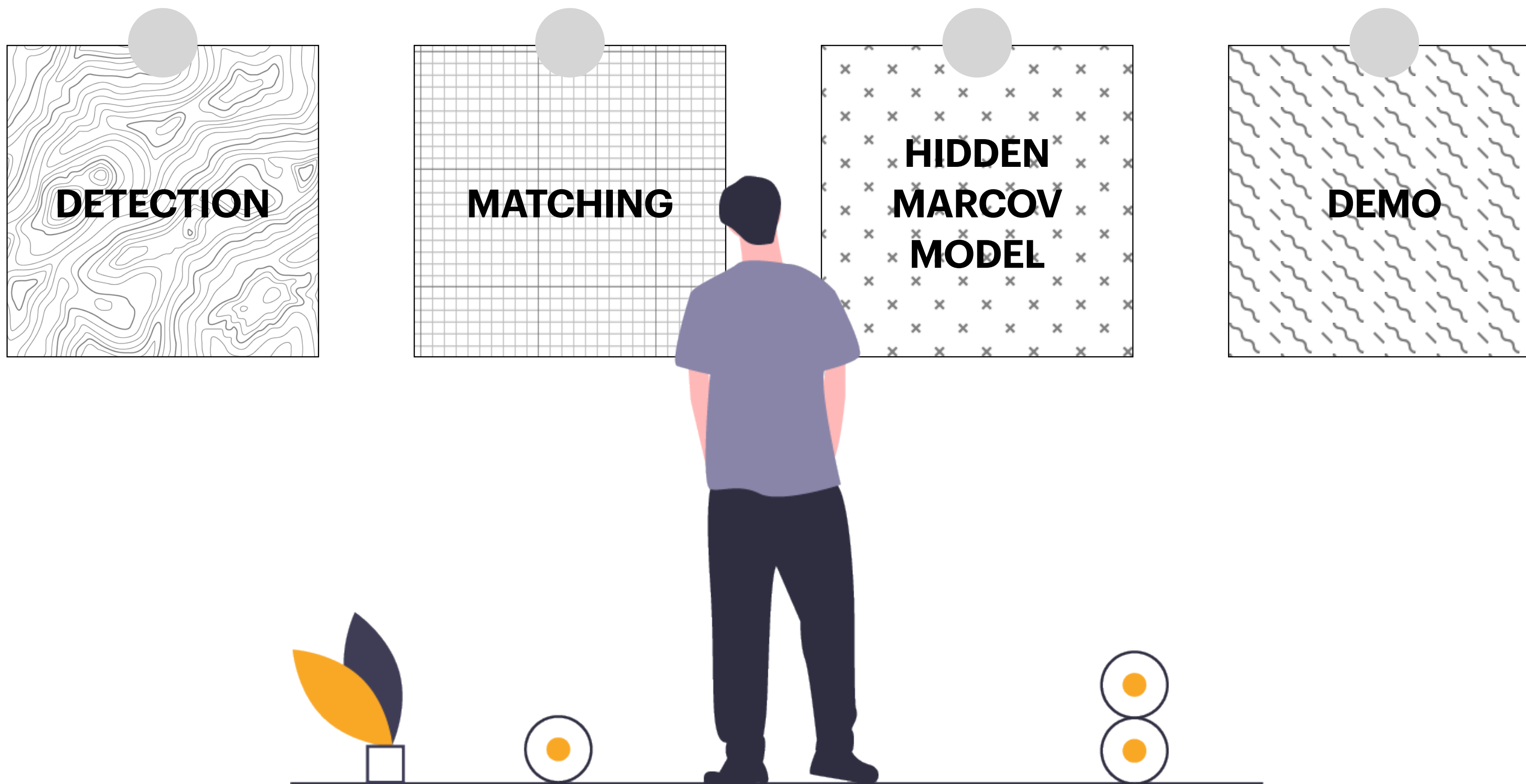# An approach for continuous painting detection and room prediction

Thomas Aelbrecht | Andreas De Witte | Jochen Laroy | Pieter-Jan Philips | Gillis Werrebrouck

CONTENT

DETECTION

MATCHING

HIDDEN MARCOV MODEL

DEMO

DETECTION

Semi-supervised algorithm

DETECTION

Unsupervised algorithm

Mean shift segmentation filter

Flood fill (keep largest mask)

Invert + erode
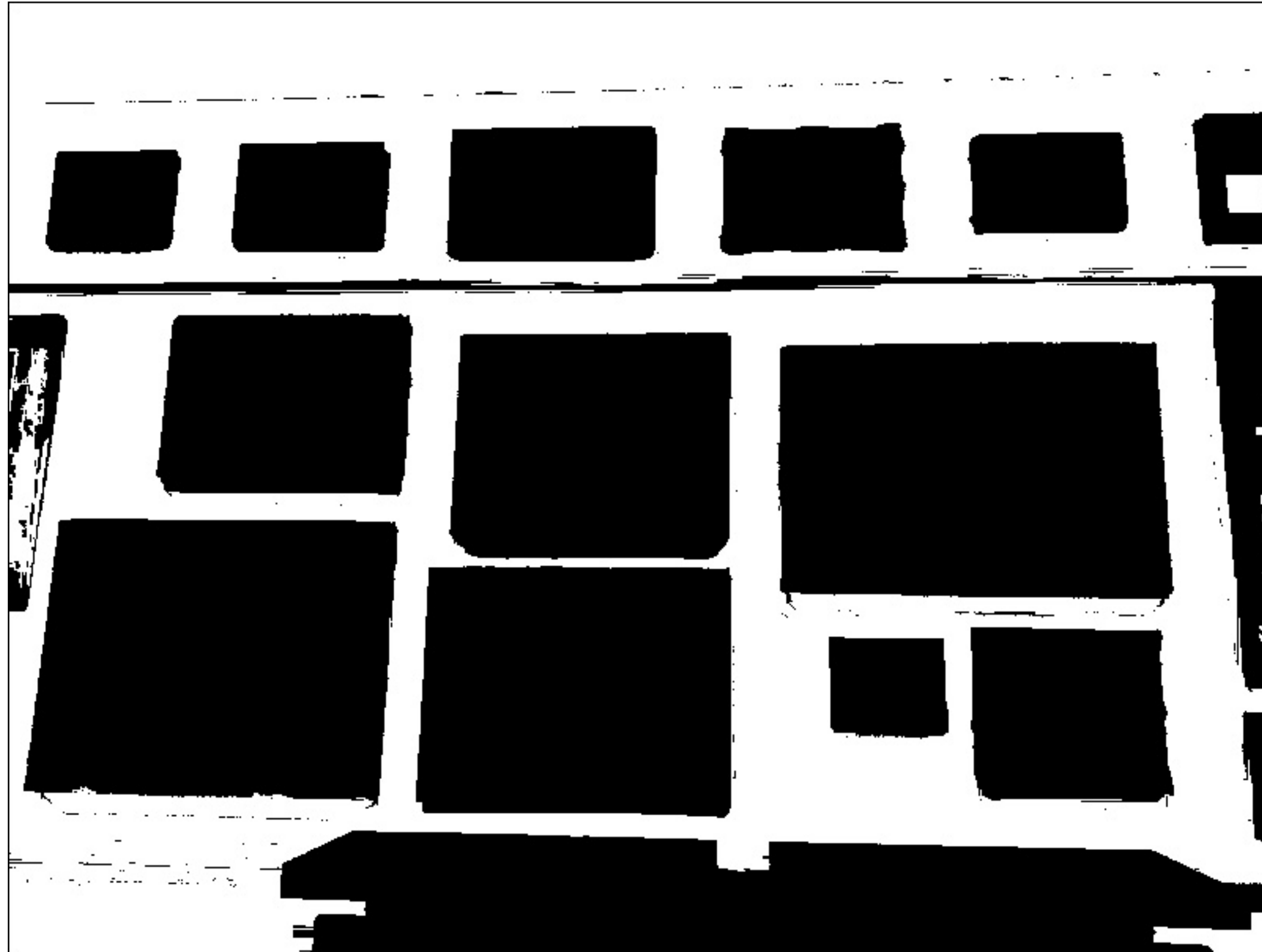
Median blur
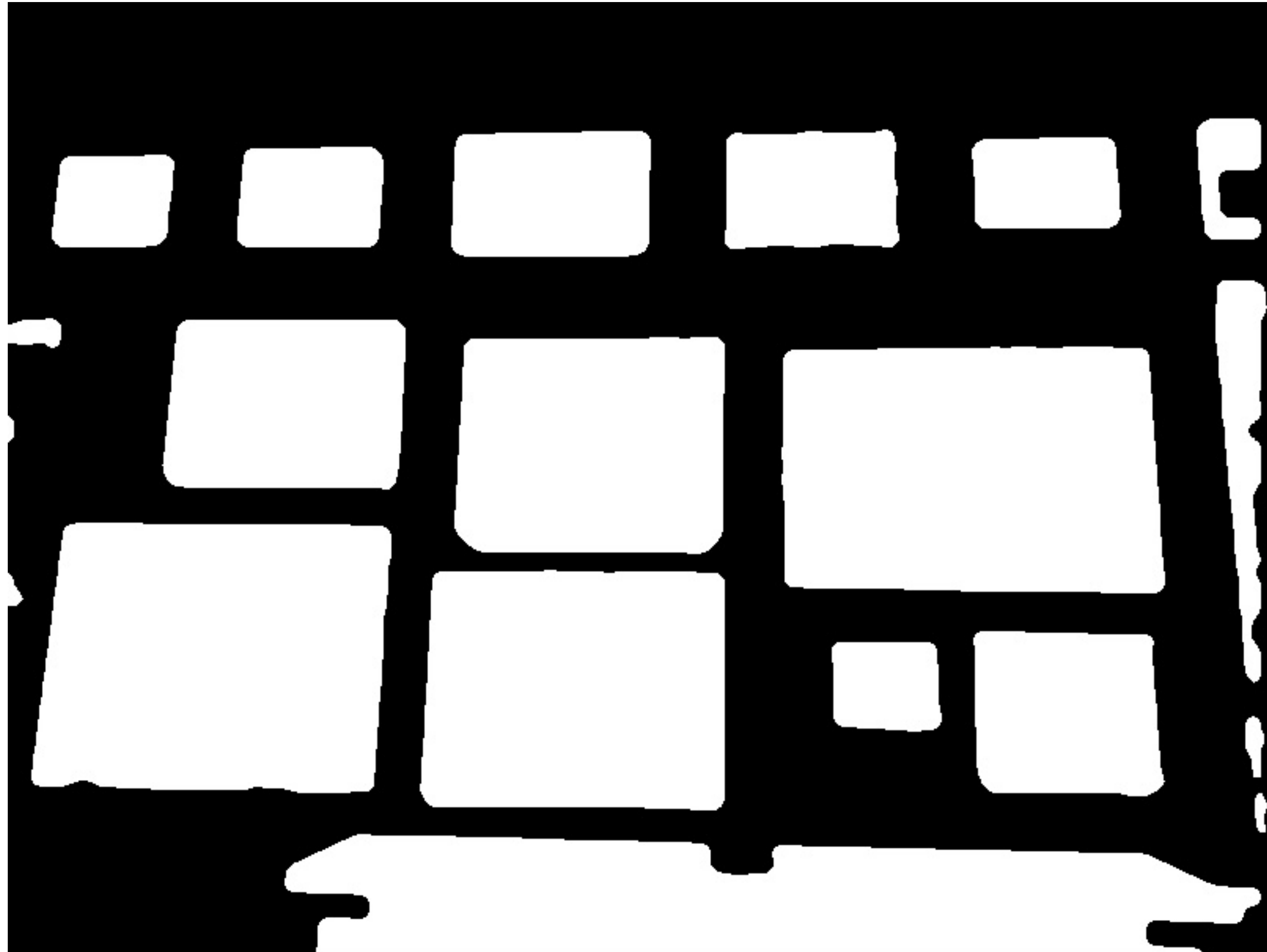
Canny (with Otsu treshold)

Close lines

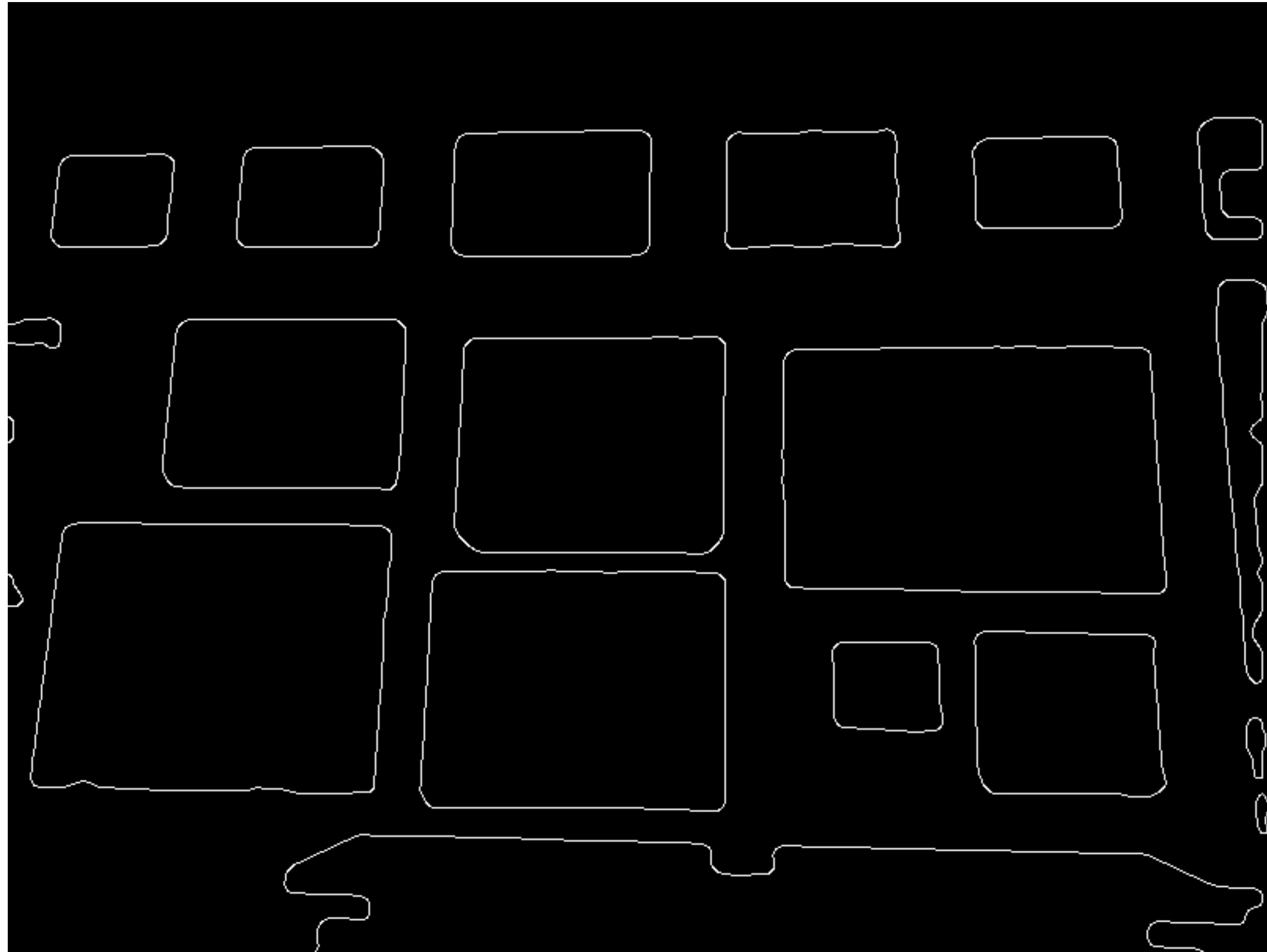Find contours

1 **mean shift segmentation filtering**

2 flood fill

3 invert + erode

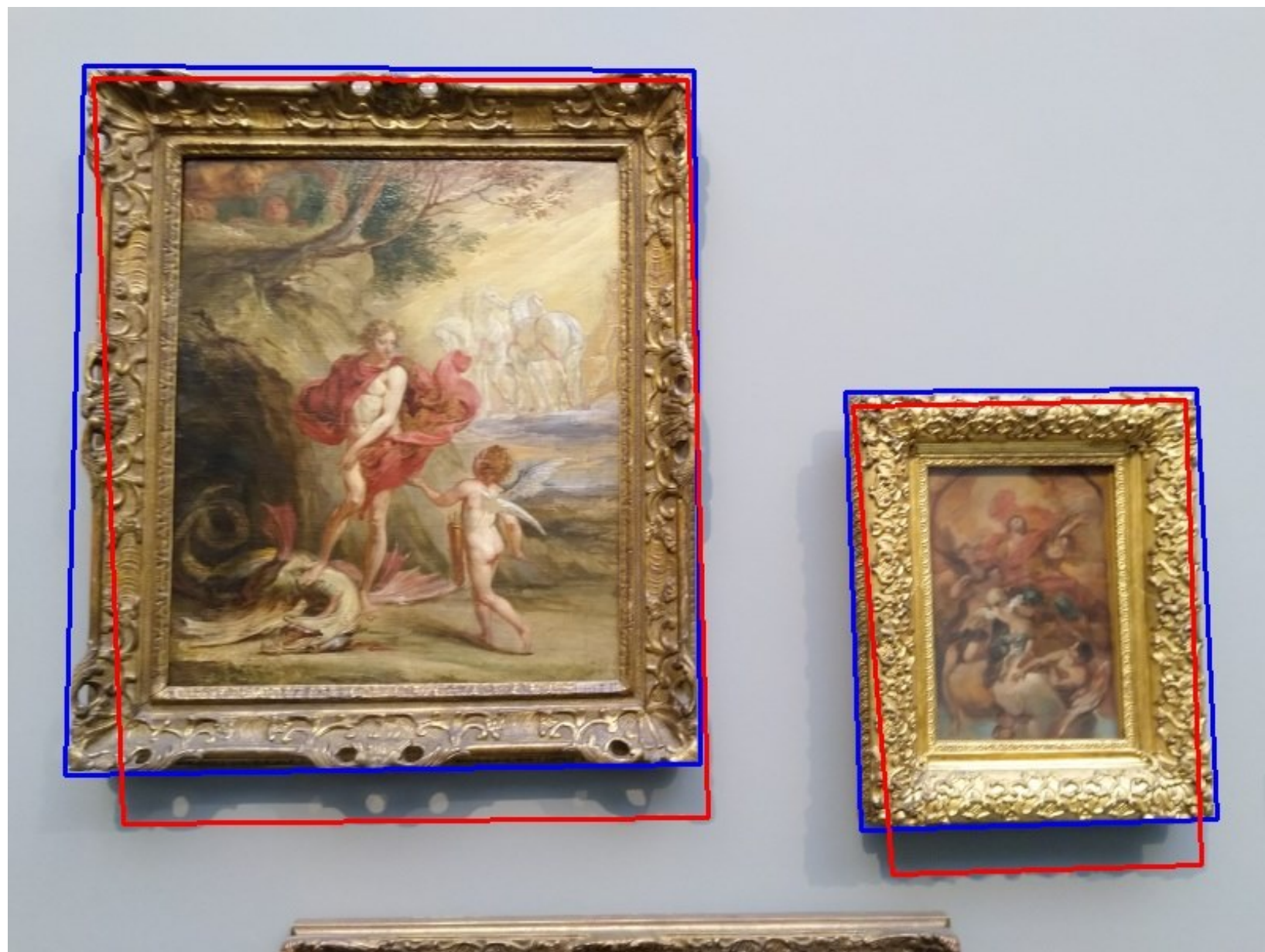# 4, 5 & 6 median blur, Canny & close lines
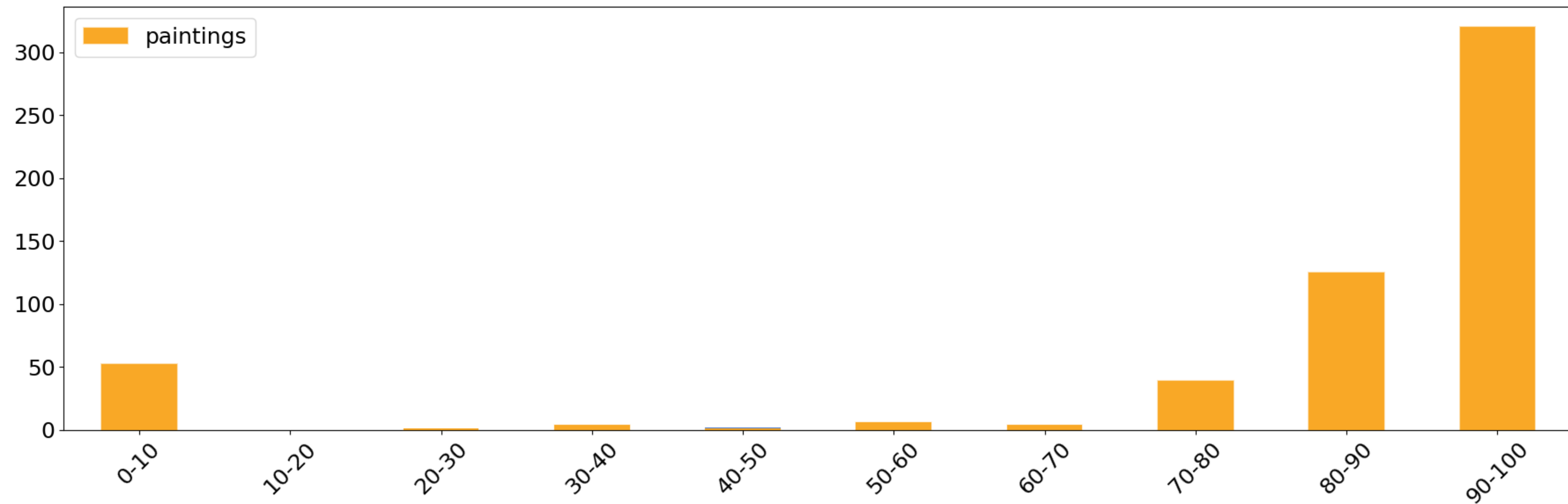
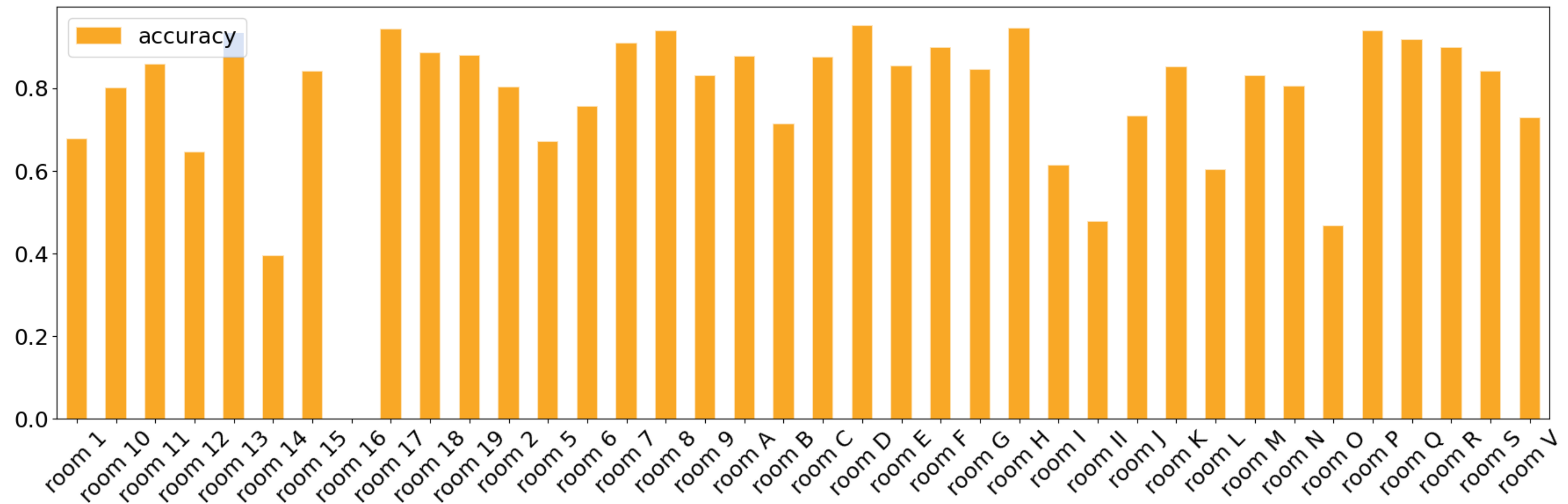# 7 find contours

SAMPLES

DETECTION

Detection accuracy ranges for the dataset
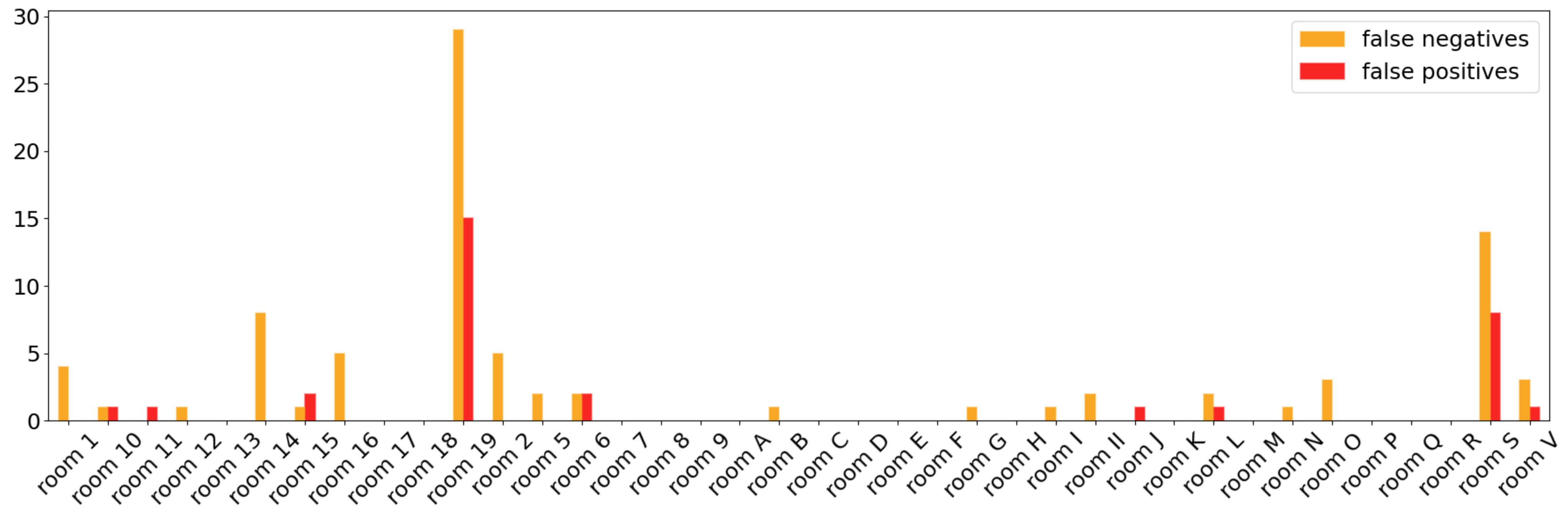
DETECTION

Average room detection accuracy

DETECTION

False negatives and false positives per room

MATCHING

IDEAS

Histograms
(block & full image)
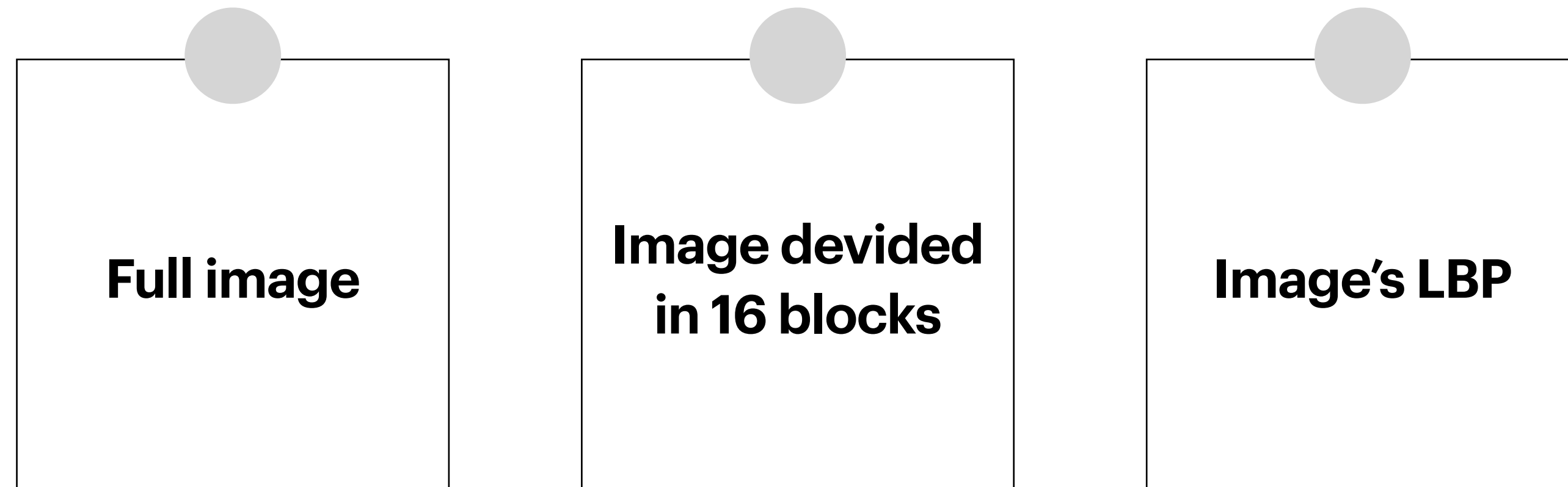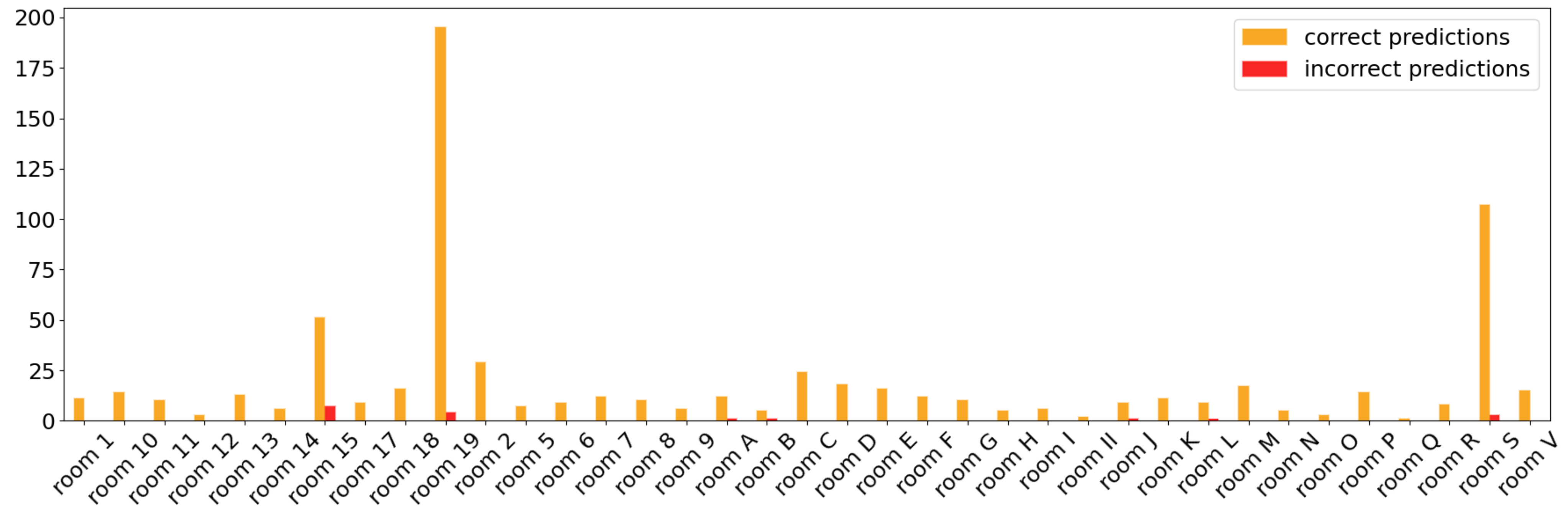Local Binary Patterns

ORB
Line segments

MATCHING

FINAL CHOICE

Based on histograms of:

Full image

Image devided in 16 blocks

Image's LBP

MATCHING

Correct and incorrect painting predictions per room

HIDDEN MARKOV MODEL

["19" , 0.456]

["3" , 0.061]

["19" , 0.320]

["J" , 0.106]

["19" , 0.764]

HIDDEN MARKOV

DEMO