

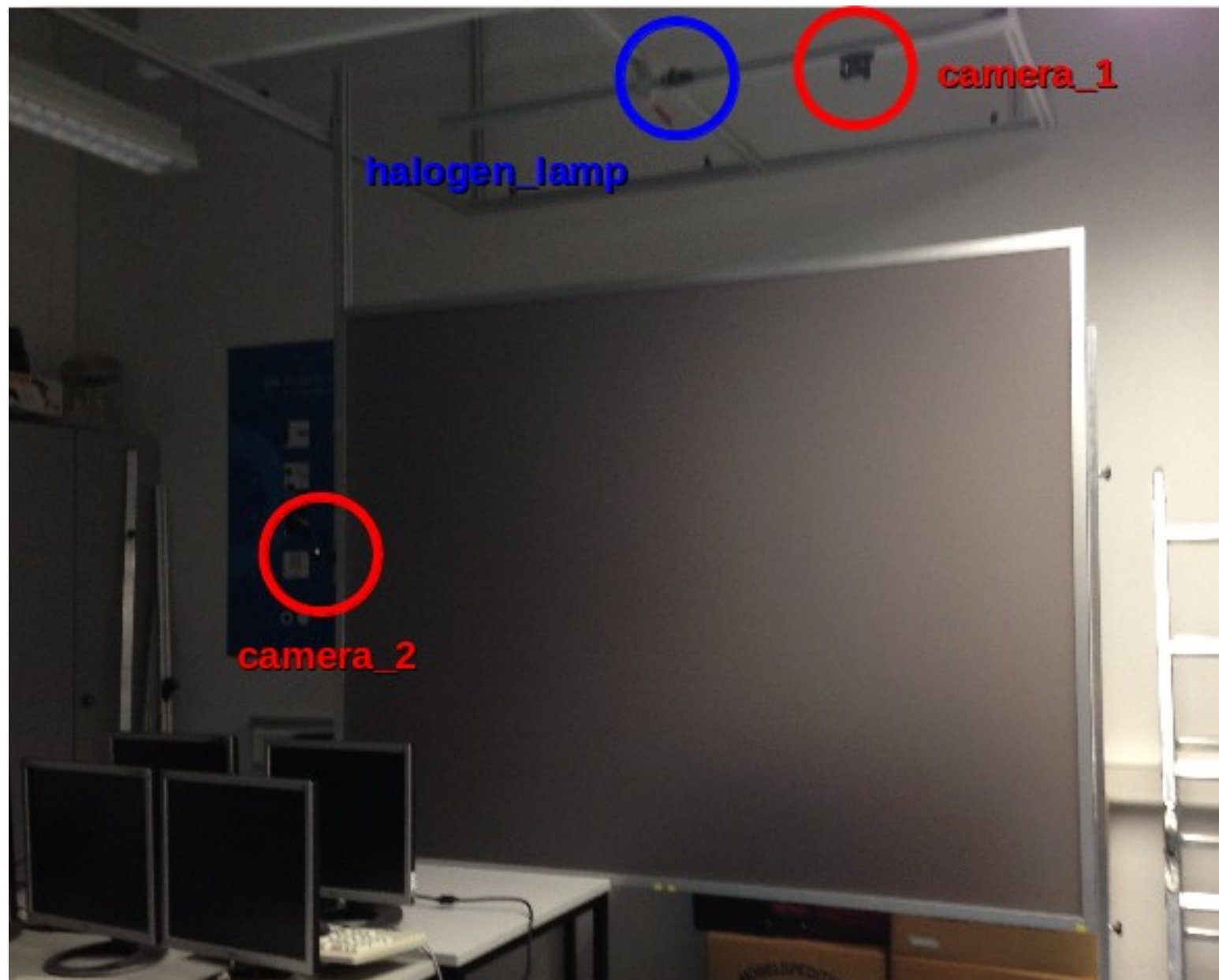
VIRTUAL “WHITEBOARD” Final PRESENTATION

COMPUTER VISION
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Jan. 15 2015

Introduction

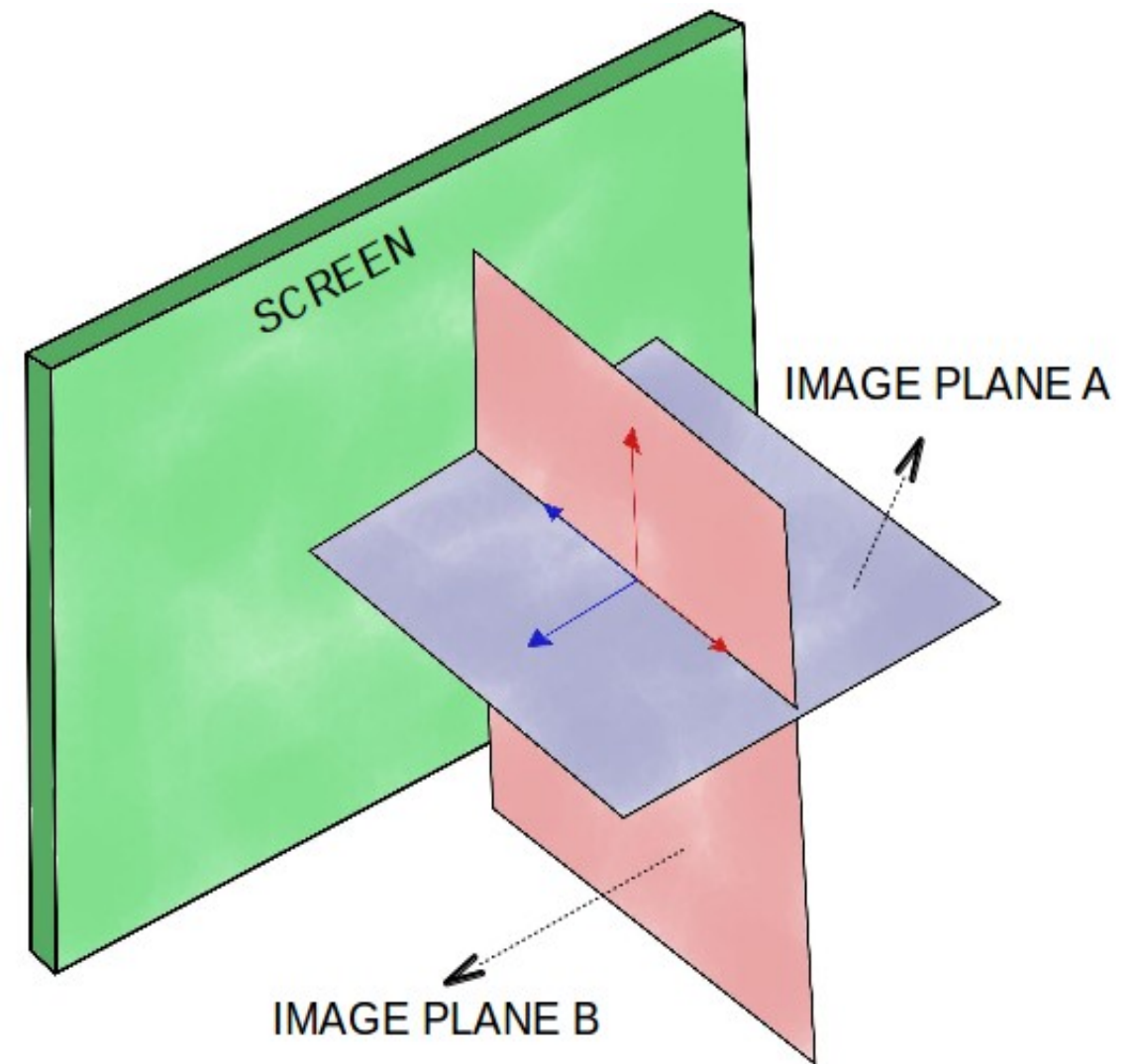
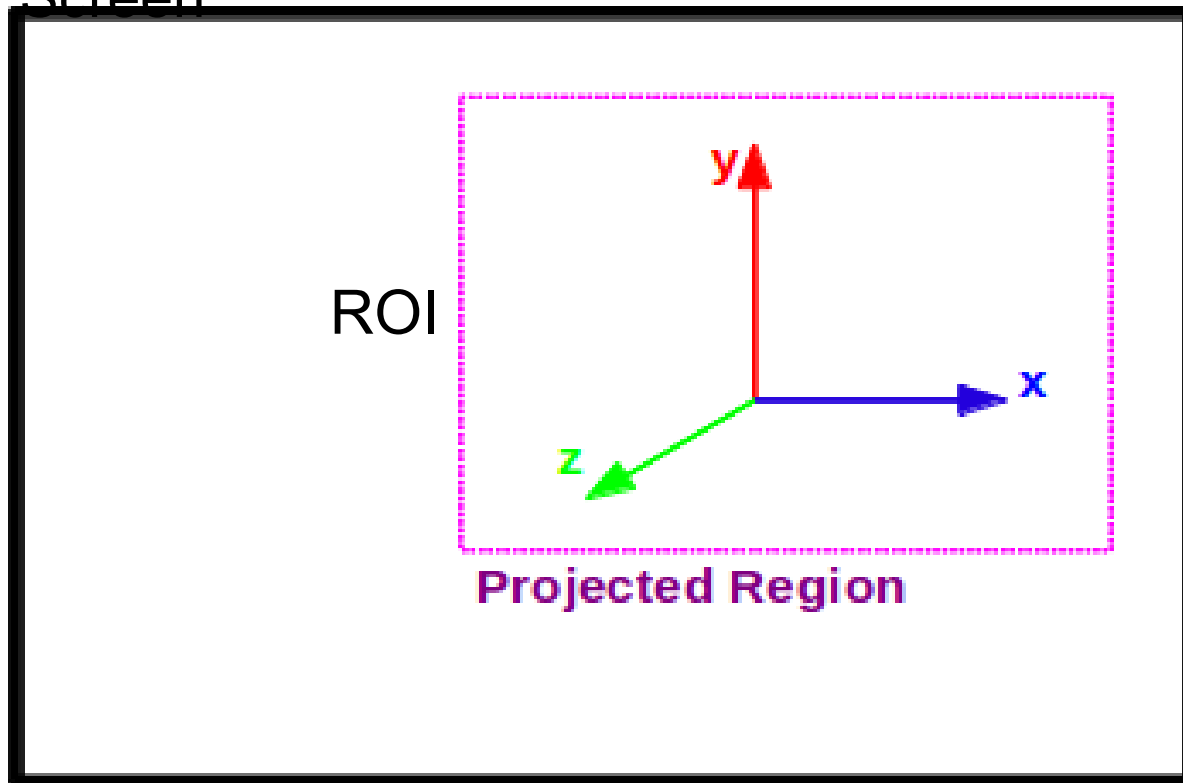
- Recognize the strokes made with a marker in a flat surface and to transform the strokes into drawings for later projection.
- Two synchronized cameras capture snapshots simultaneously.
- Process two snapshots from different perspectives to detect the position of a pre-defined marker.
- Draw detected strokes and project them into a screen for visualization.

Description

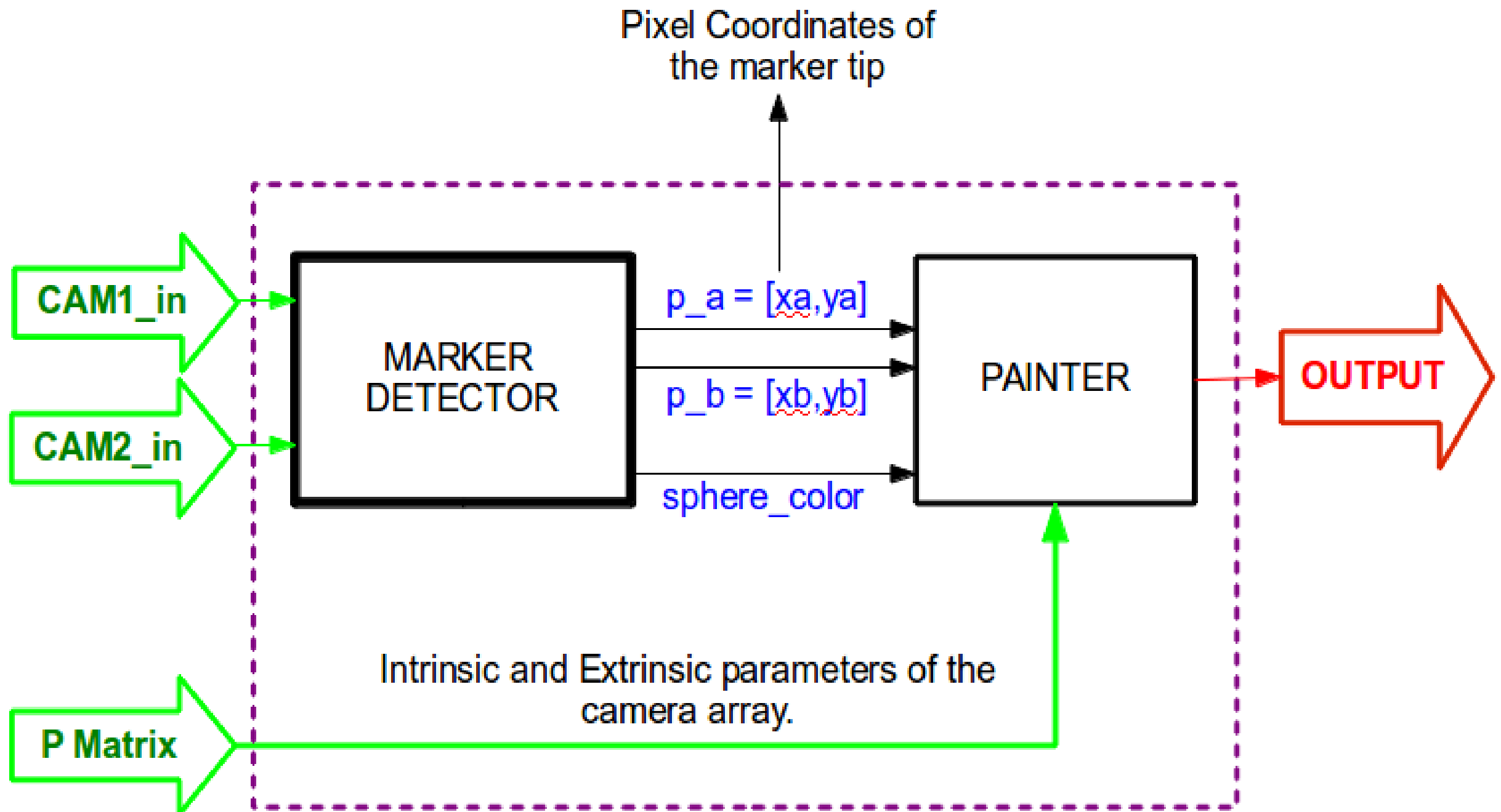


Description

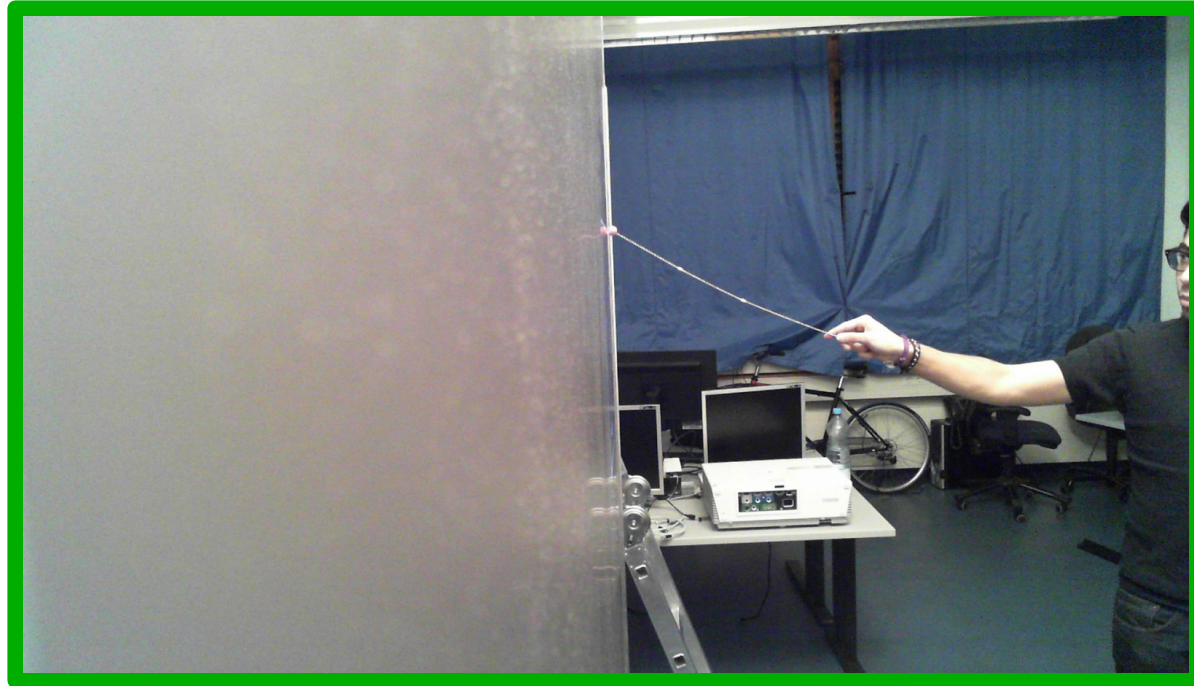
Glass
Screen



System Description



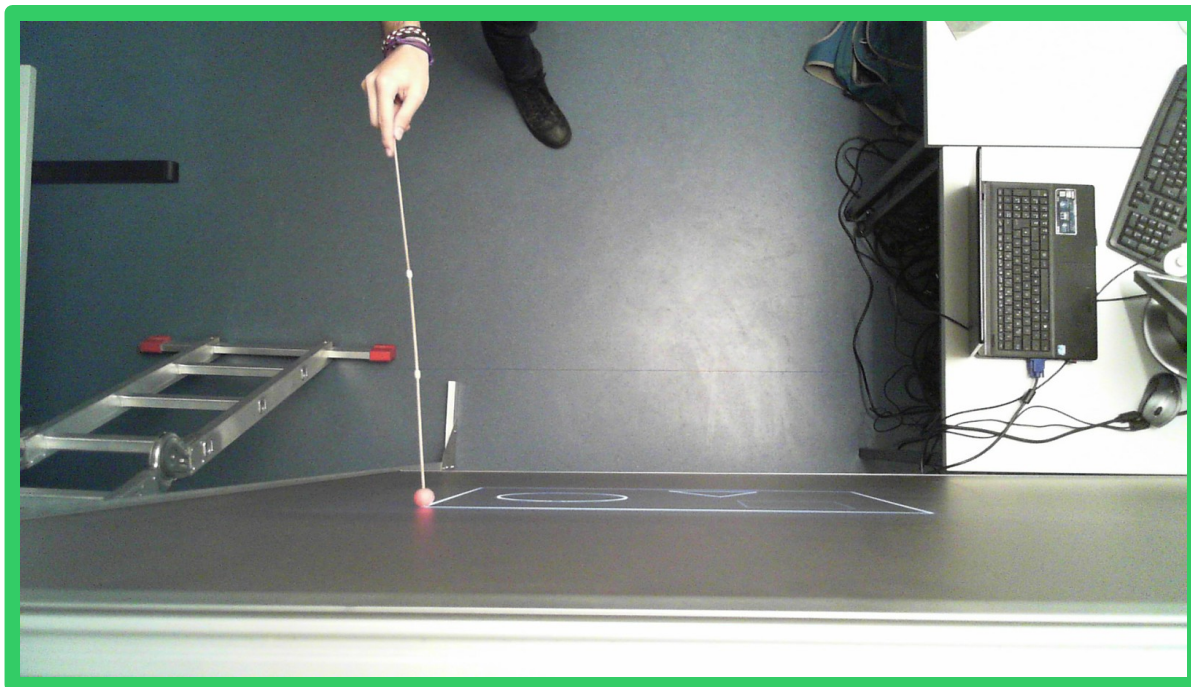
Input



Resolution: 1920x1080

OFFLINE DESIGN:

50-100 frames (images) per view.



3 sessions “recorded”, with three different colored markers (r,g,b).

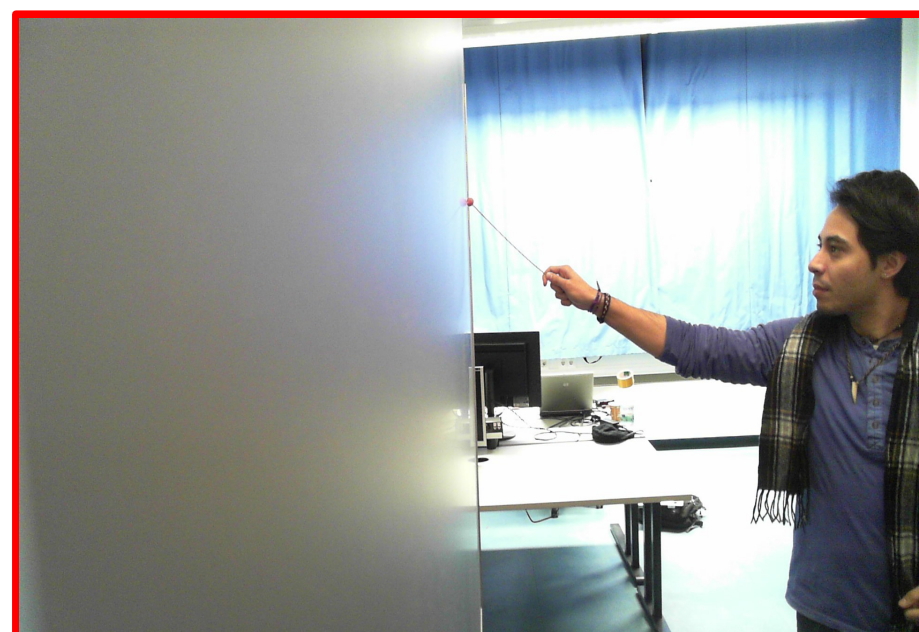
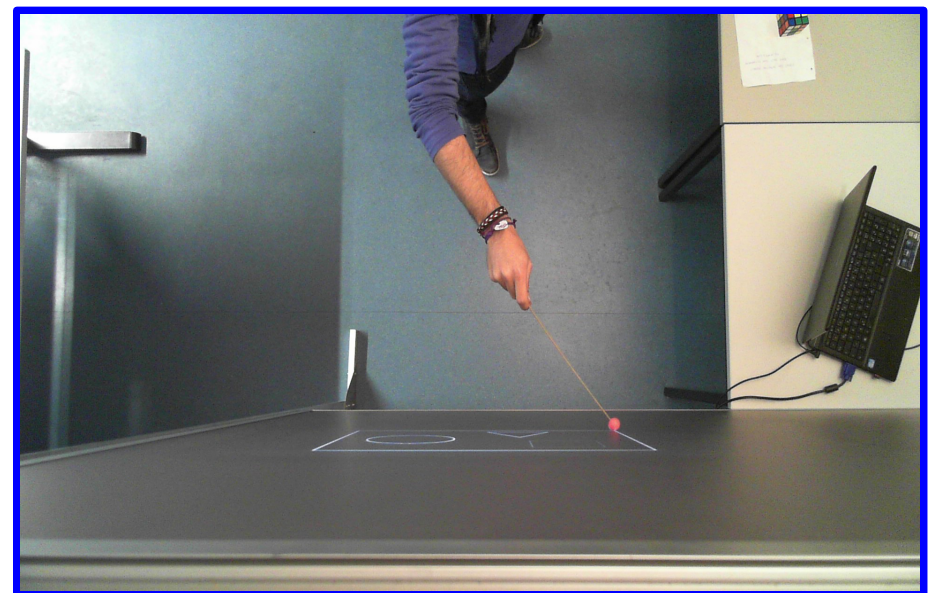
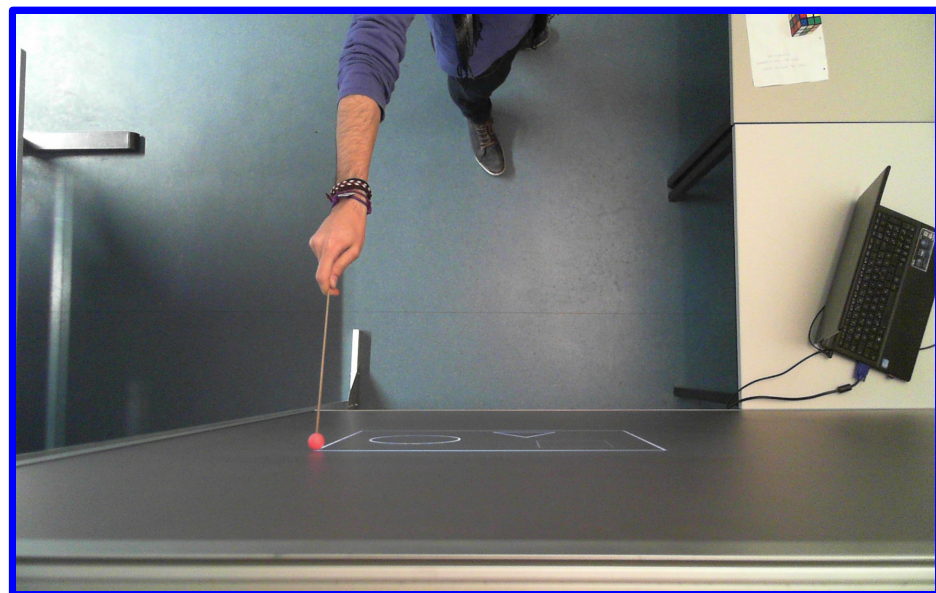
Calibration

Background

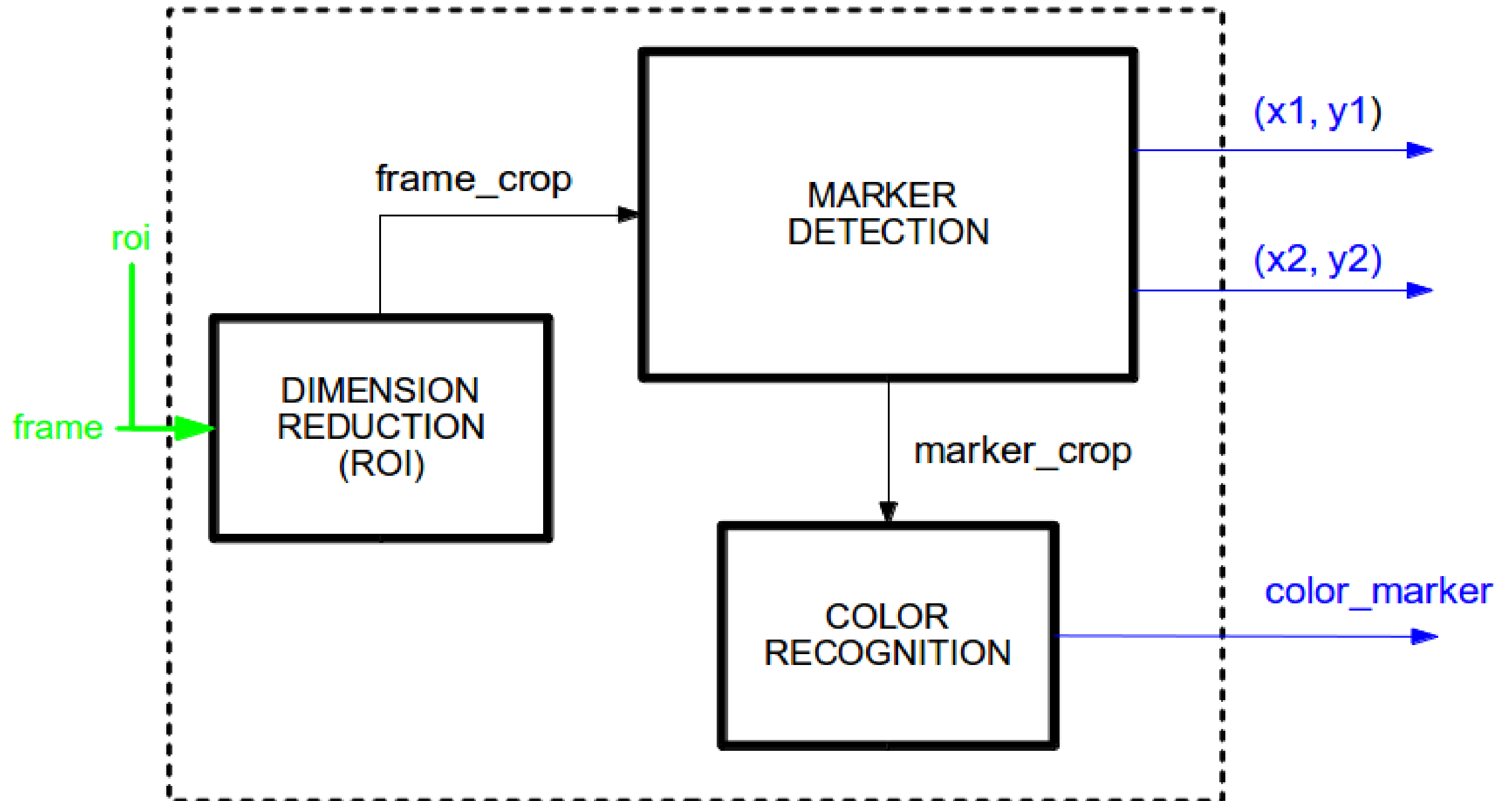


Calibration

Corners

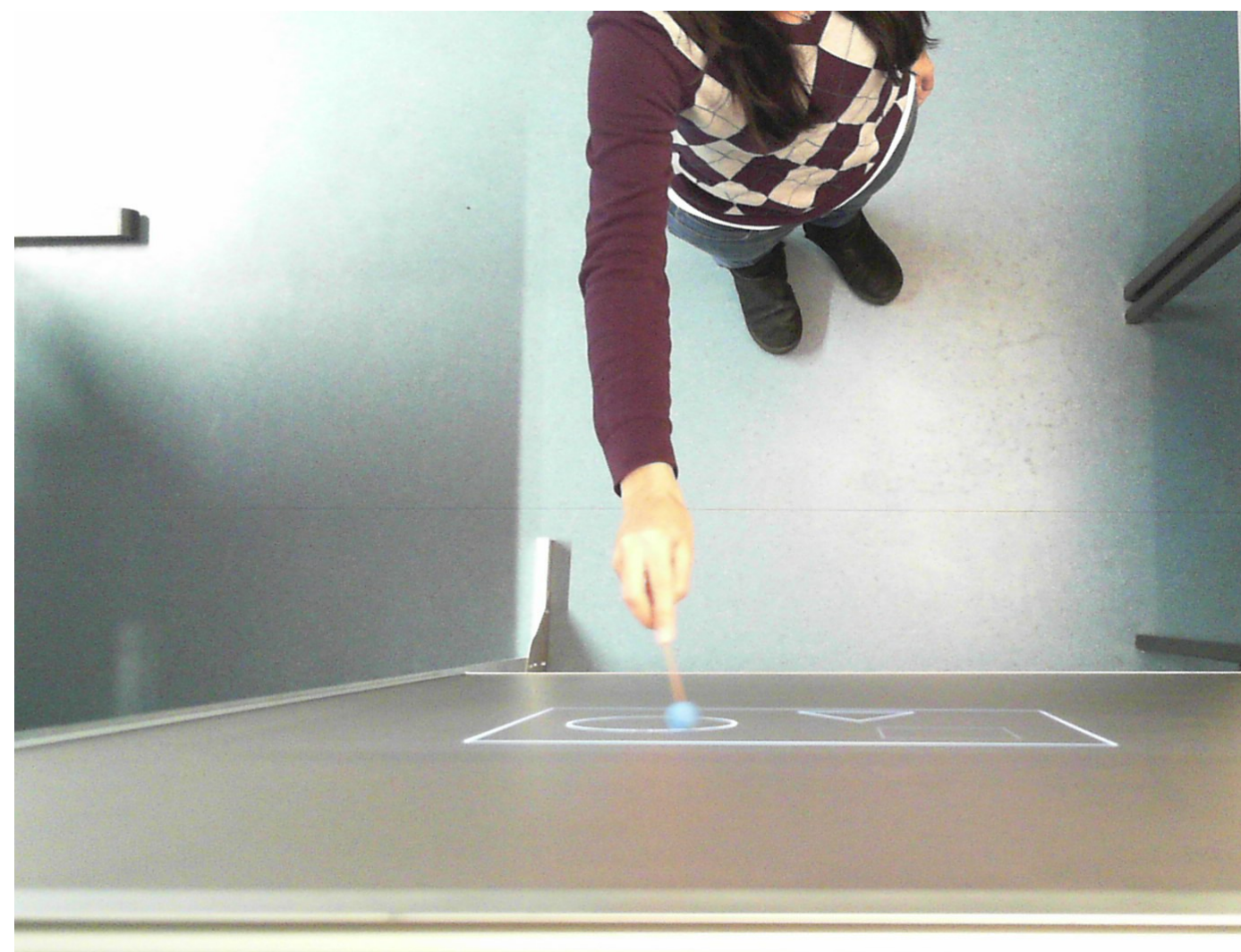


Marker Detector System



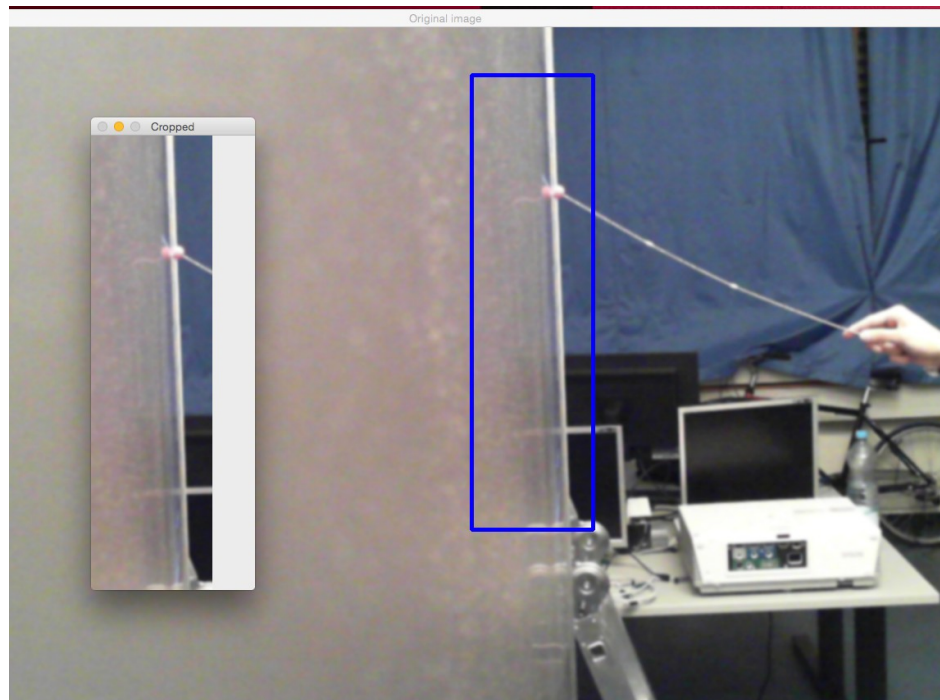
Results

Data Synchronization

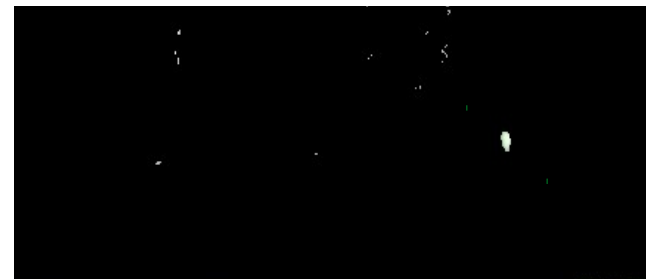


Marker Detection

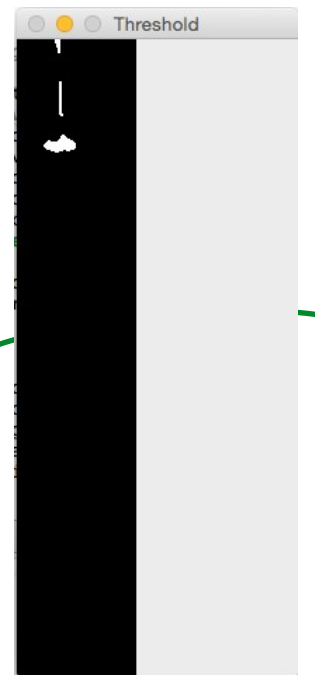
Color Threshold



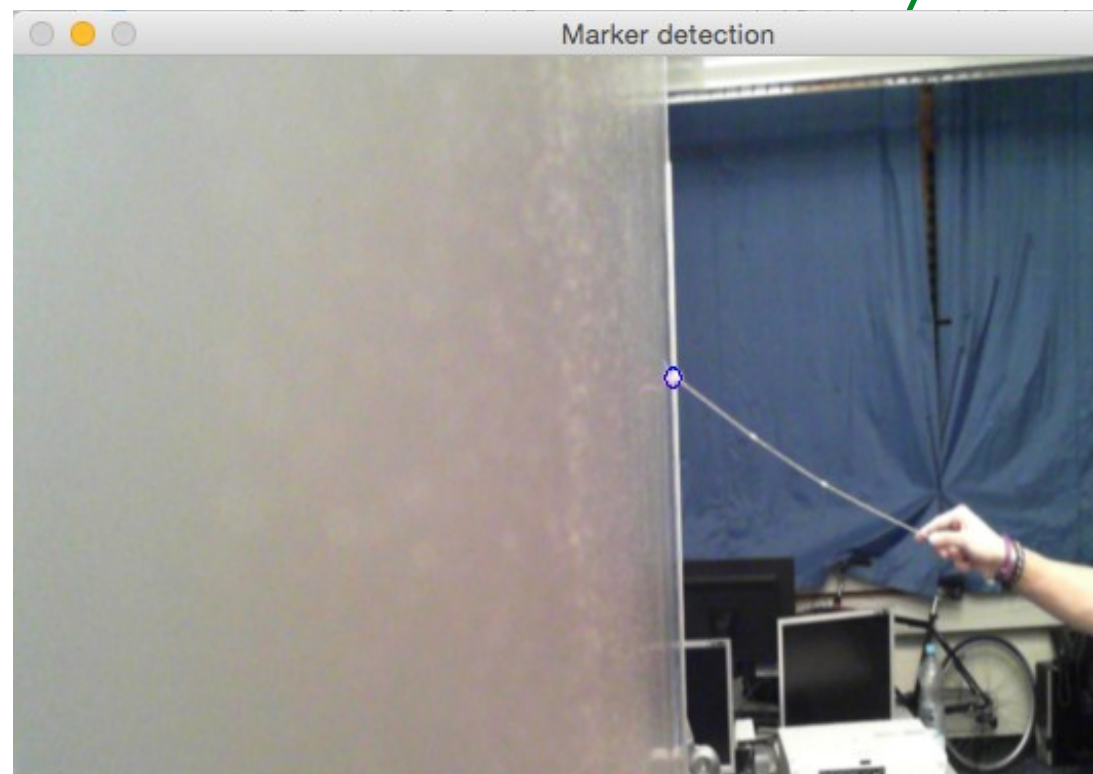
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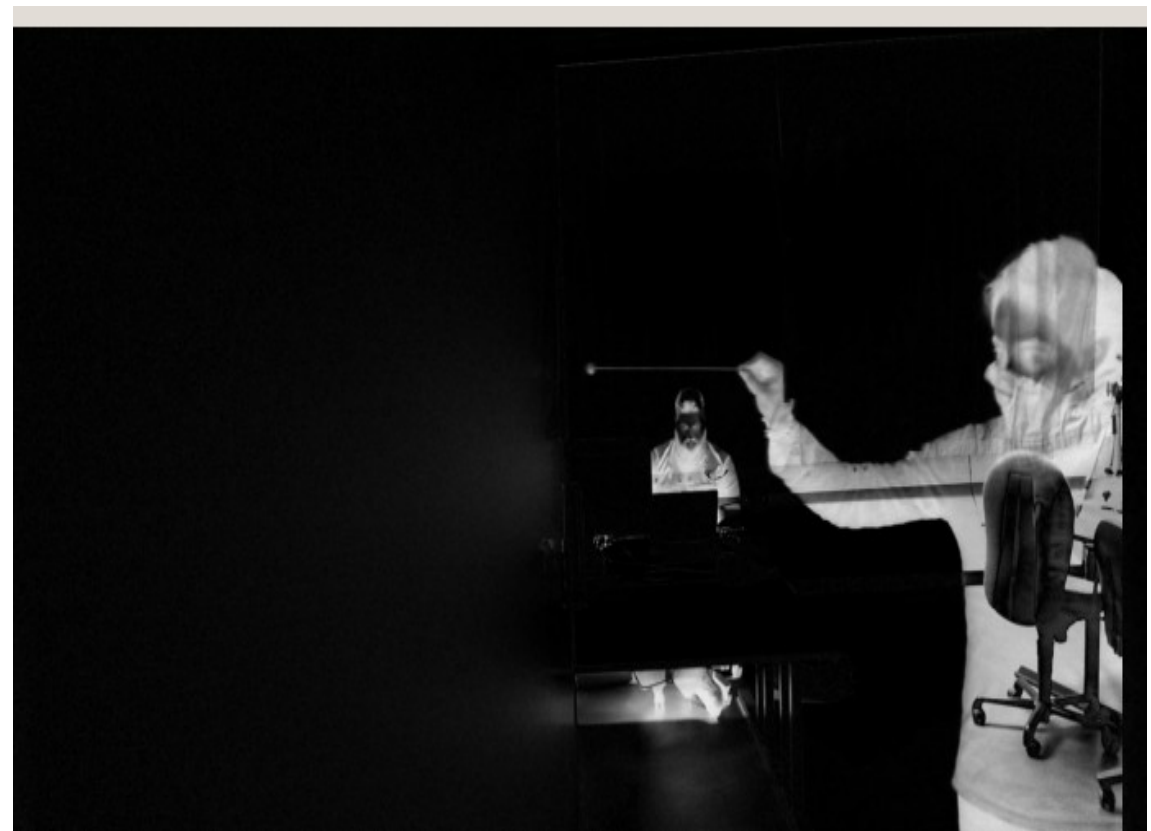
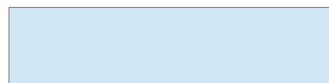


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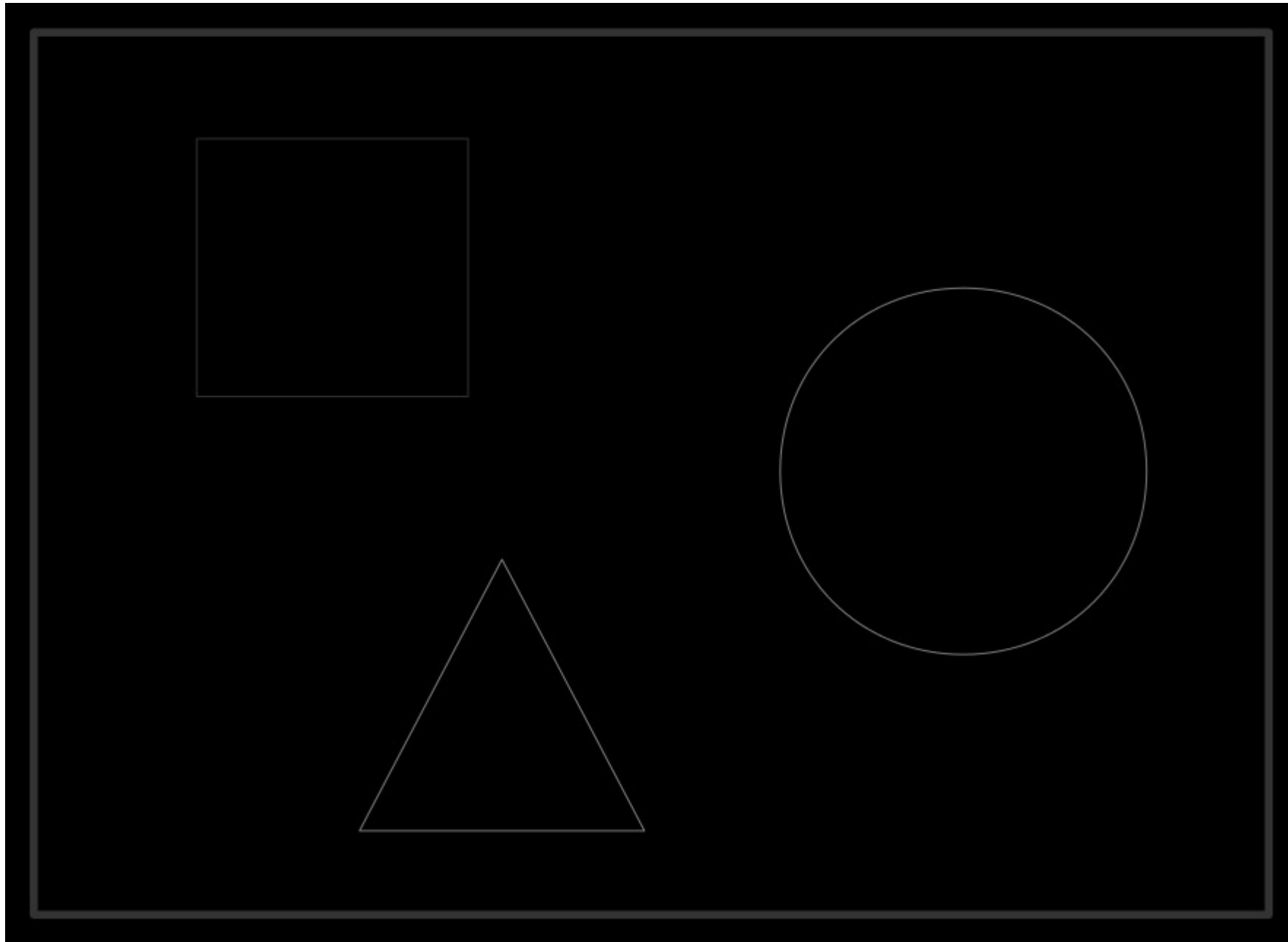


Marker Detection

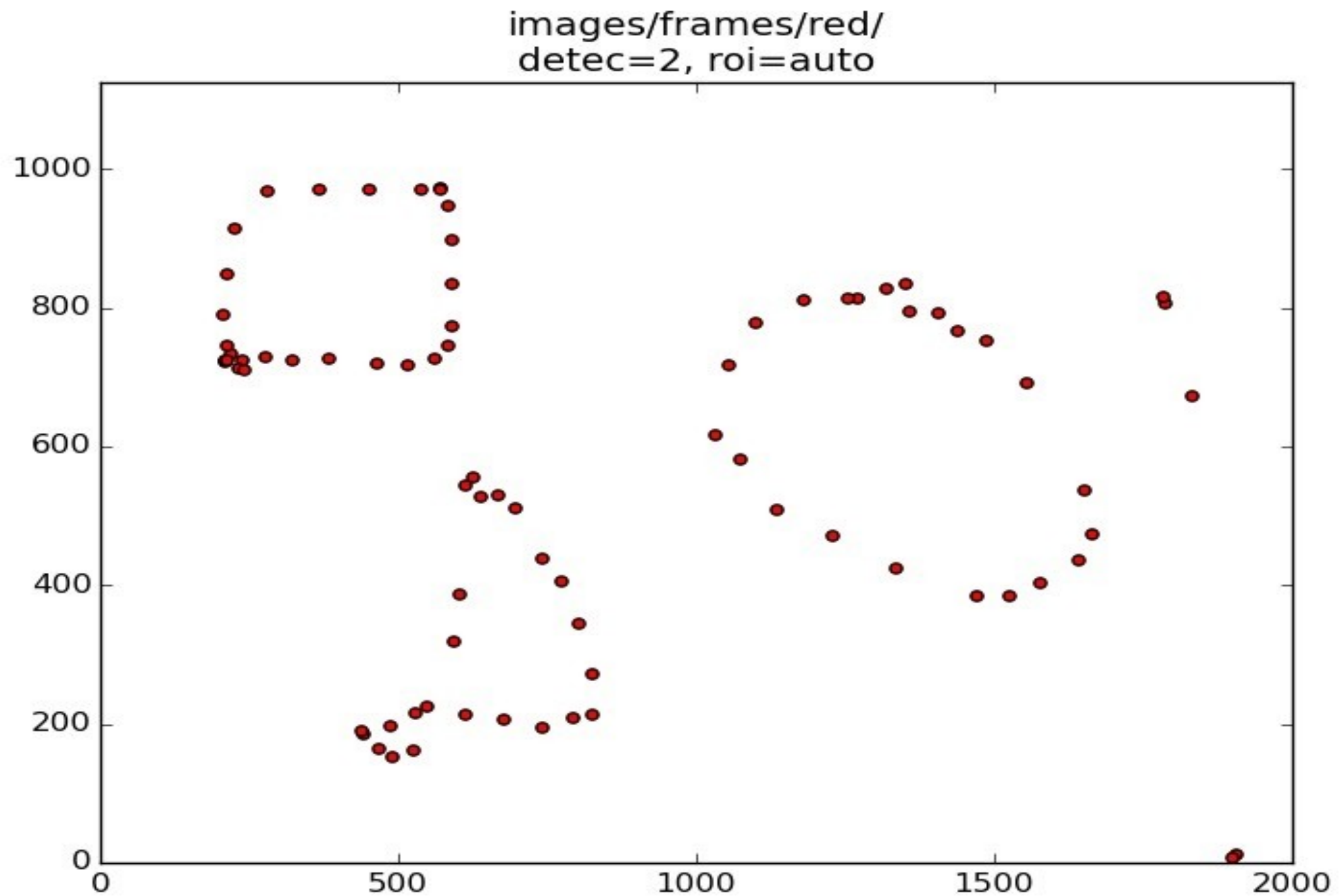
Background Difference



Guideline (Evaluation)



Results



Results

