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## INTRODUCTION

### Motivation

- Automatically detect text in images
- Text annotations for scanned documents
- Augmented reality

### Challenges

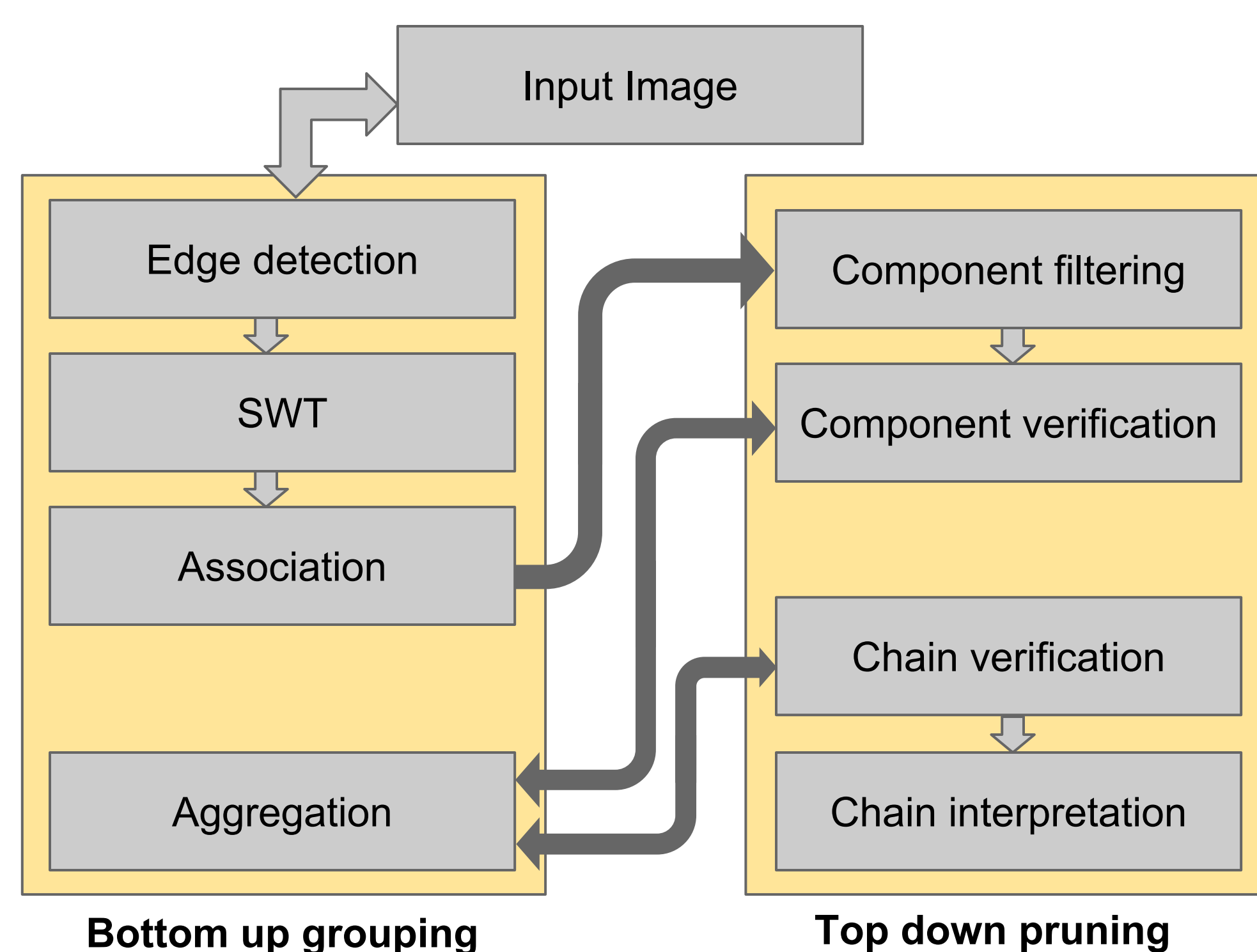
- Differentiate text from other objects in a scene
- Accurately locate the regions of text

### Goal

- Given an image, isolate text region
- Perform OCR on isolated area

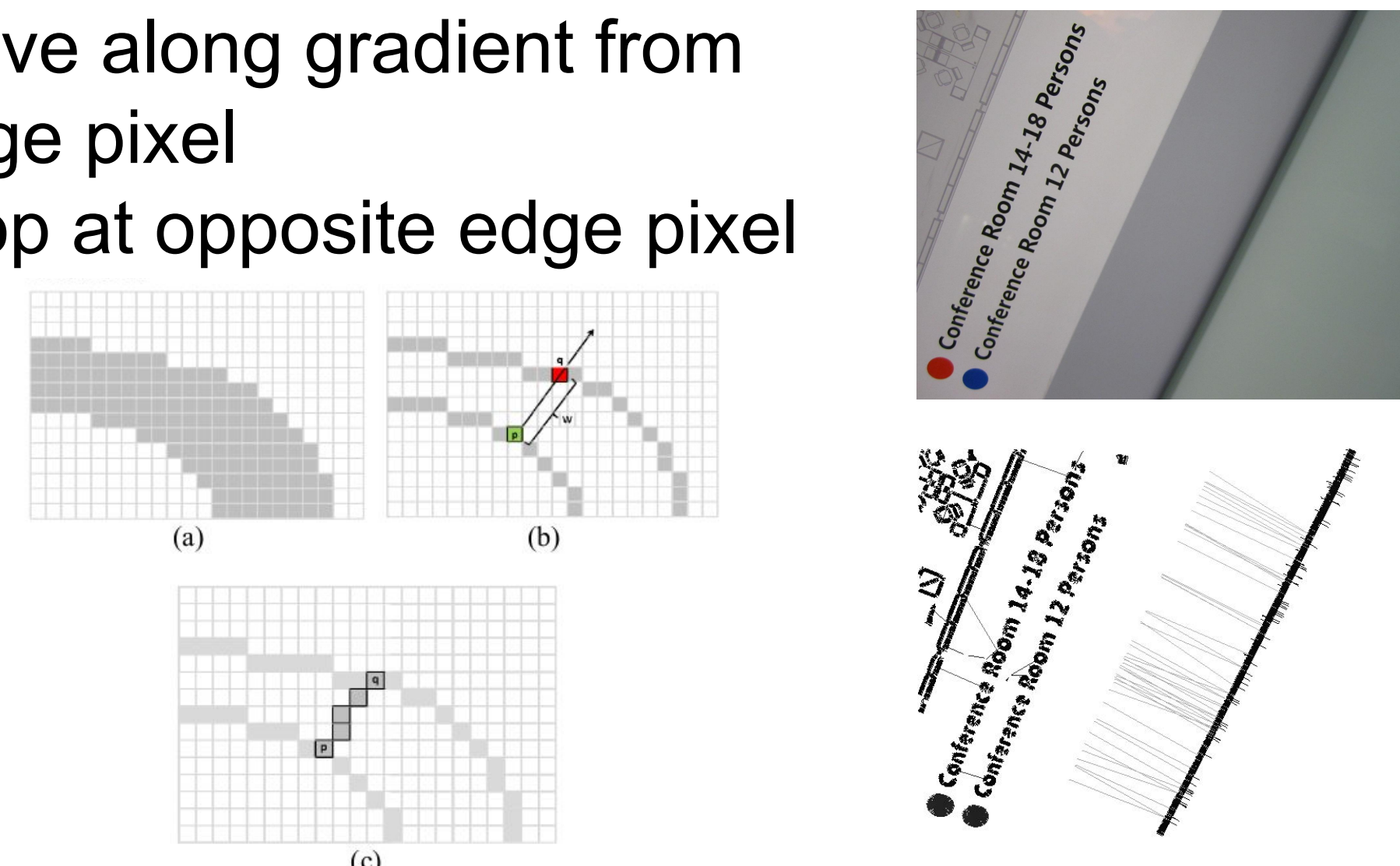
## APPROACH

- Heuristic approach
- + Simple, human experience
- Parameters to tune for optimal performance
- Data driven approach
- Automatically learn feature based rules
- Training data for supervision



## STROKE WIDTH TRANSFORM

- Width of stroke each pixel belongs to
- Move along gradient from edge pixel
- Stop at opposite edge pixel



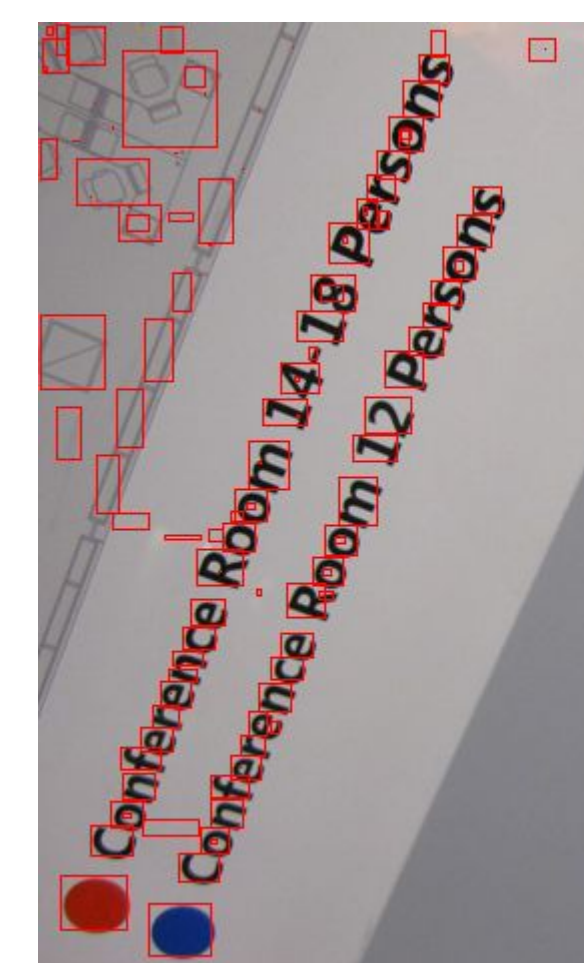
## COMPONENT ANALYSIS

### Grouping

- Pixels with similar stroke width

### Pruning

- Geometry
  - Size, color, stroke width
- Random forest classifier
  - Characteristic scale, edge shape, contour shape etc.



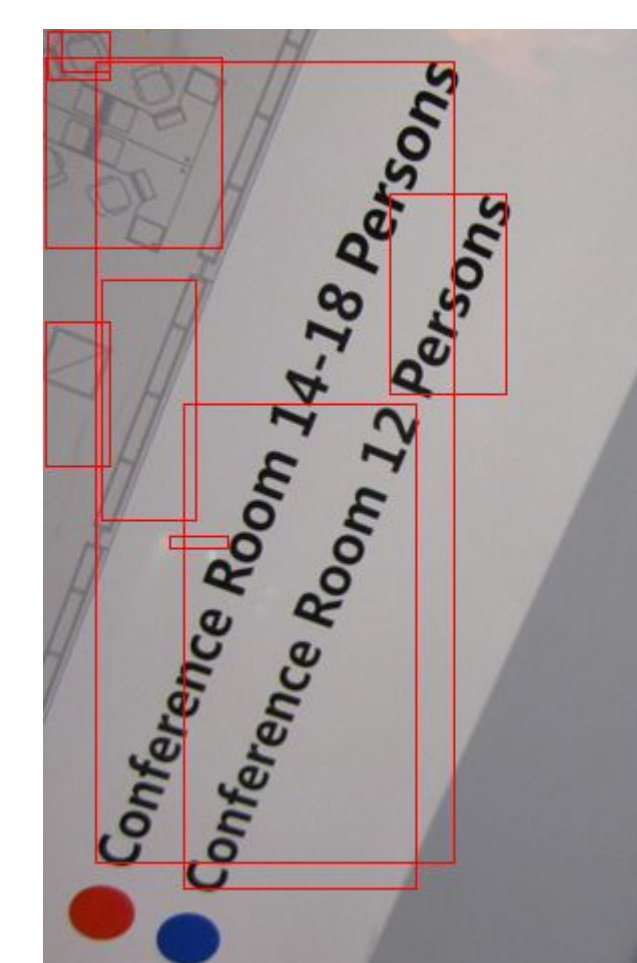
## CHAIN ANALYSIS

### Grouping

- Spatial and color distance

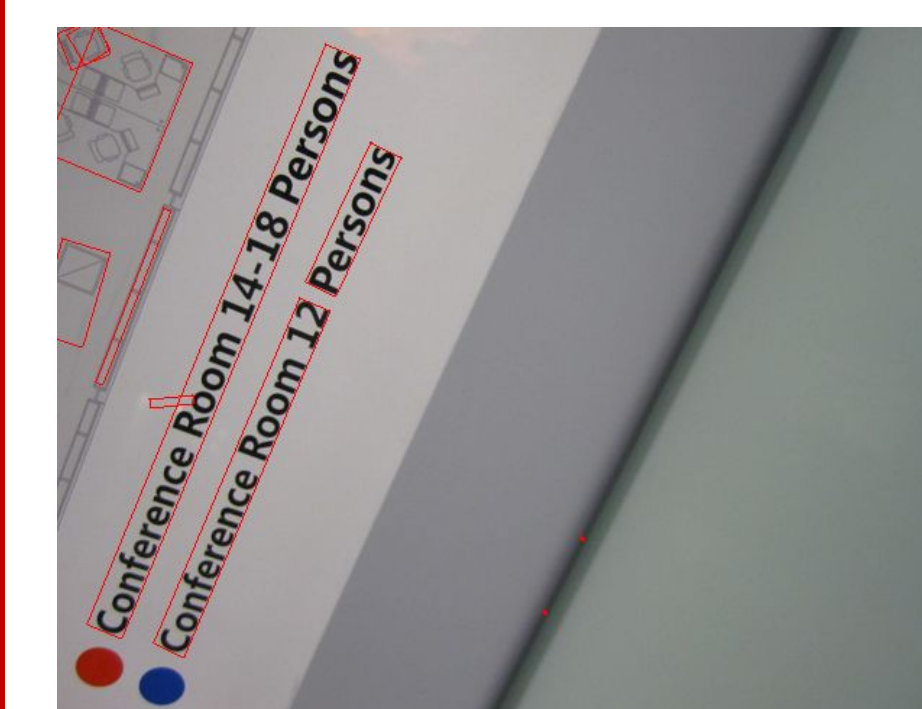
### Pruning

- Small, unique chains
- Random forest classifier
  - Number of components, major orientation etc.

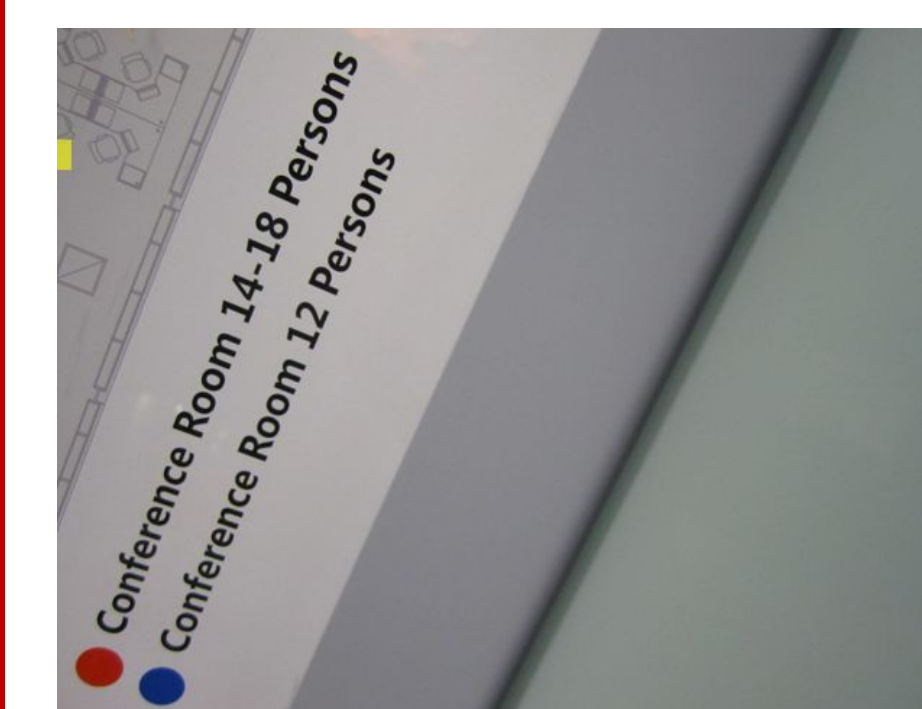
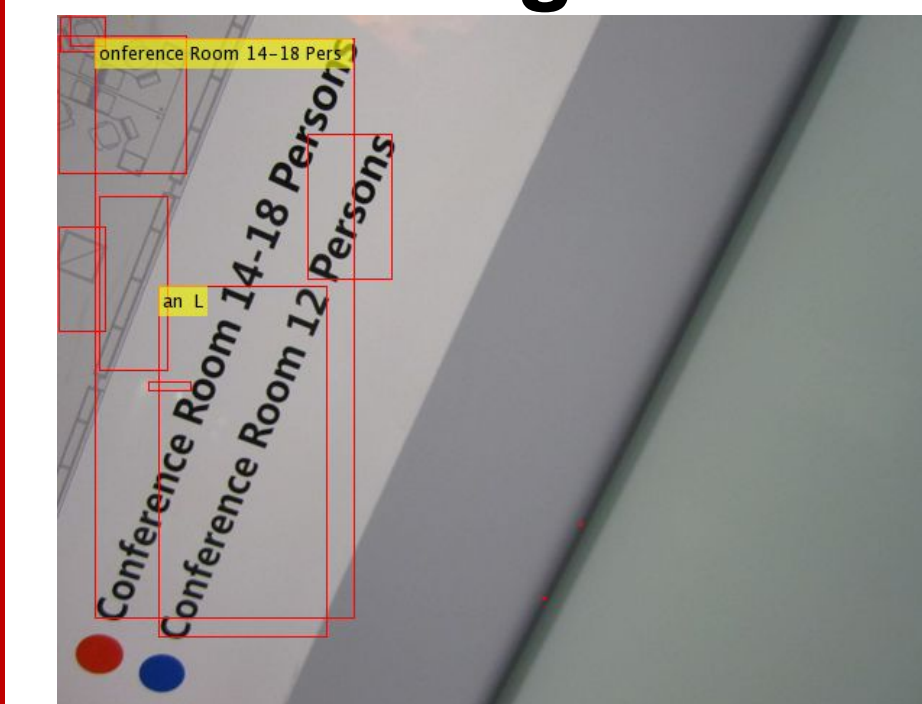


## RESULTS

### Isolating text in images



### Detecting text



## CONCLUSION

- Isolating text makes text recognition more reliable
- Method can be implemented on a mobile with ease
- Grab our code at

<https://github.com/satwikkottur/f14-cv-project/>

### References

- Boris Epshtein, Eyal Ofek, and Yonatan Wexler. Detecting text in natural scenes with stroke width transform. *In CVPR 2010.*
- Cong Yao, Xiang Bai, Wenyu Liu, Yi Ma, and Zhuowen Tu. Detecting texts of arbitrary orientations in natural images. *In CVPR 2012.*