TOPIC

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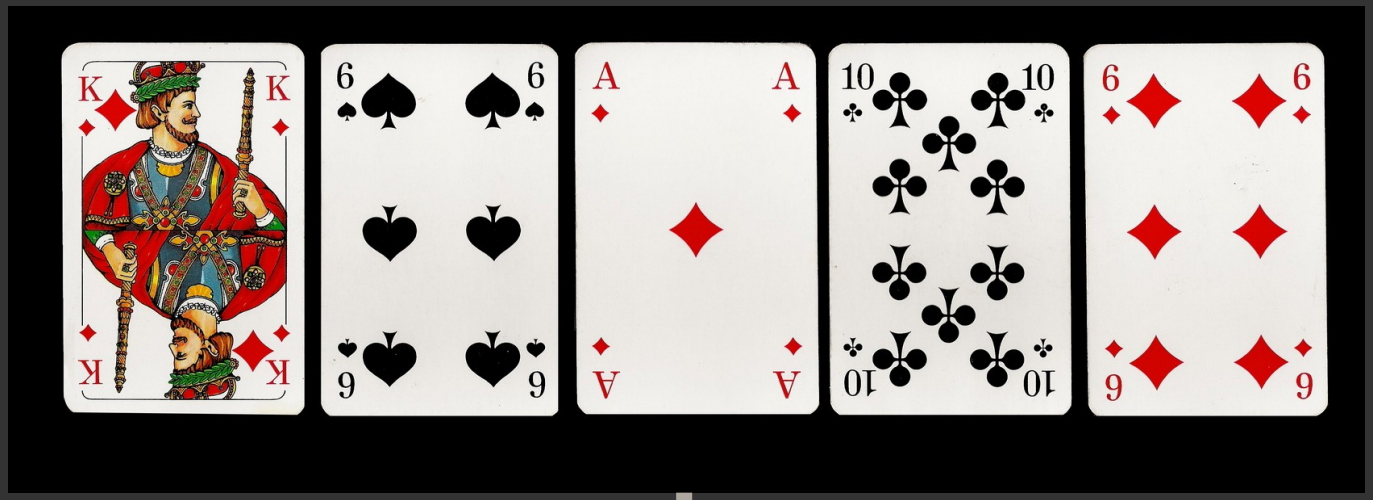
Card Detector:
Playing Card Recognition with Image Processing

IDEA

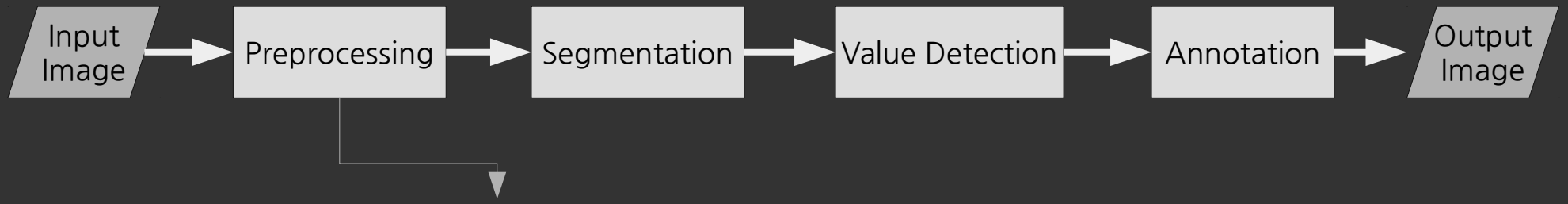


Input

card detection

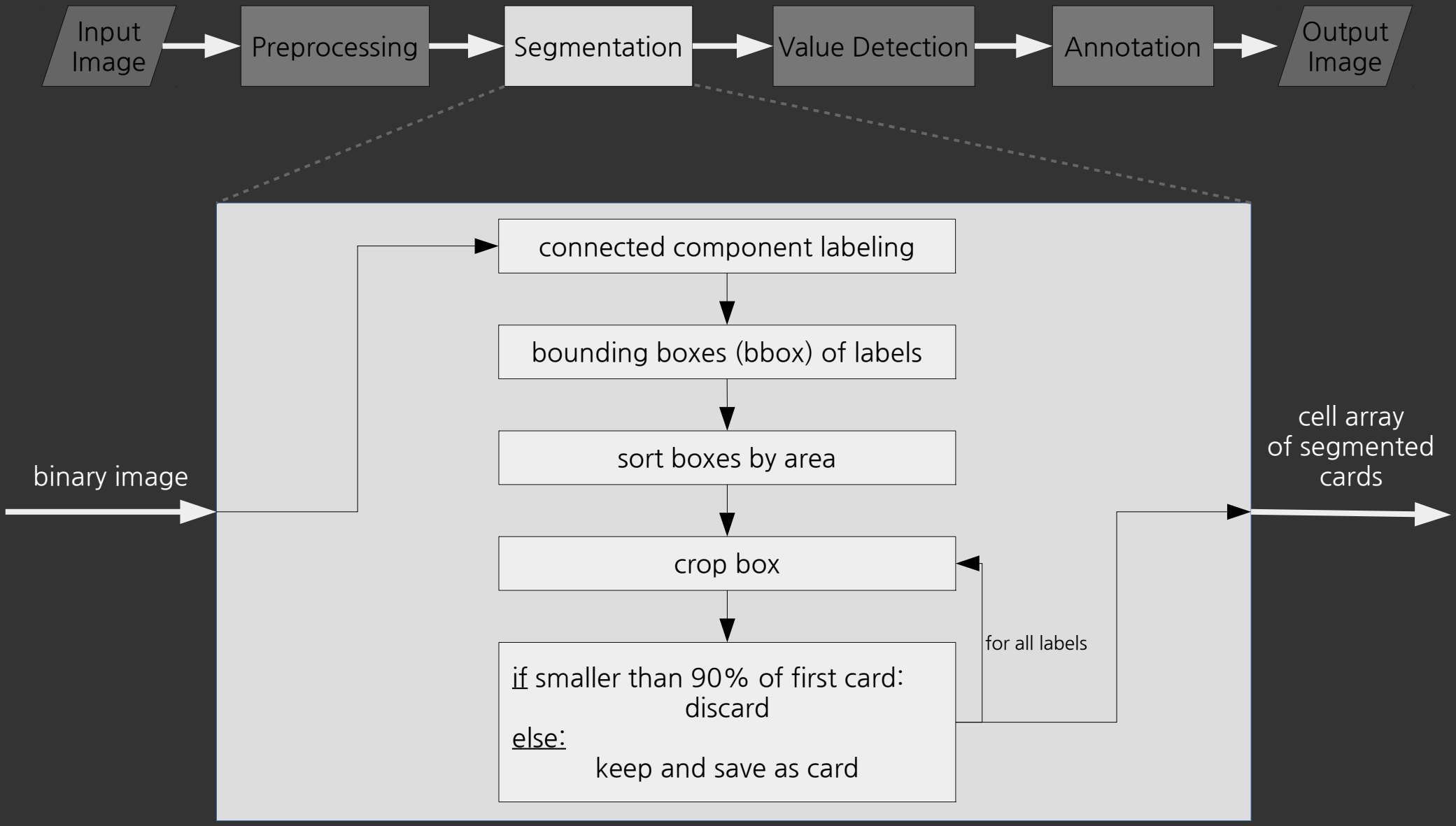
Output

PROCESS

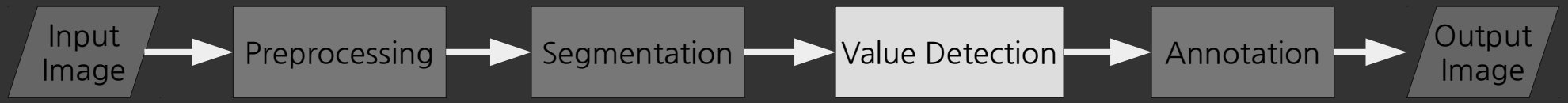


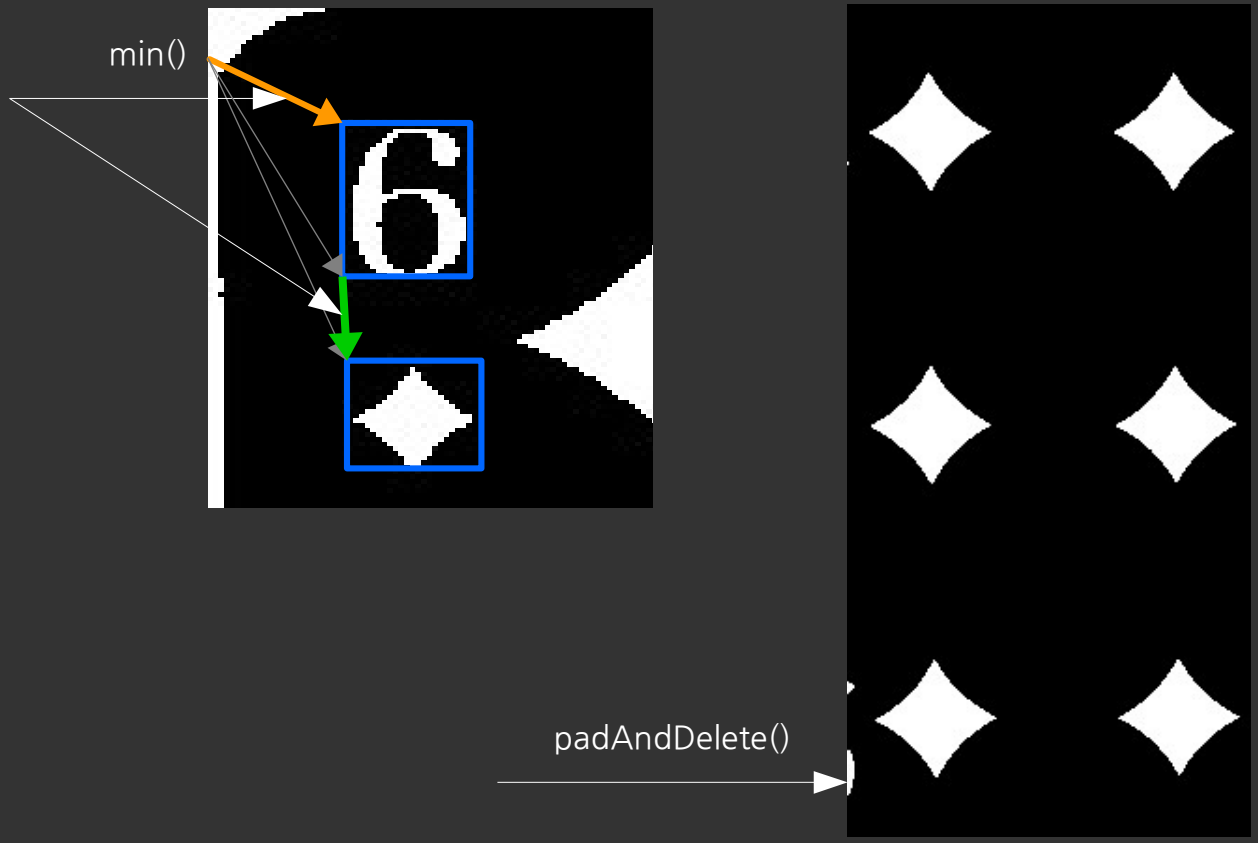
- check input and arguments
- smooth input image (gauss)
- binary image with Otsu threshold

PROCESS/SEGMENTATION



PROCESS/VALUE DETECTION

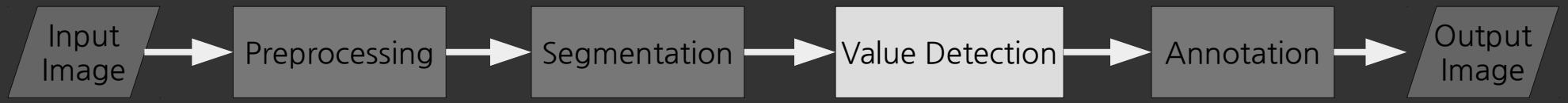




1. value bbox
2. symbol box

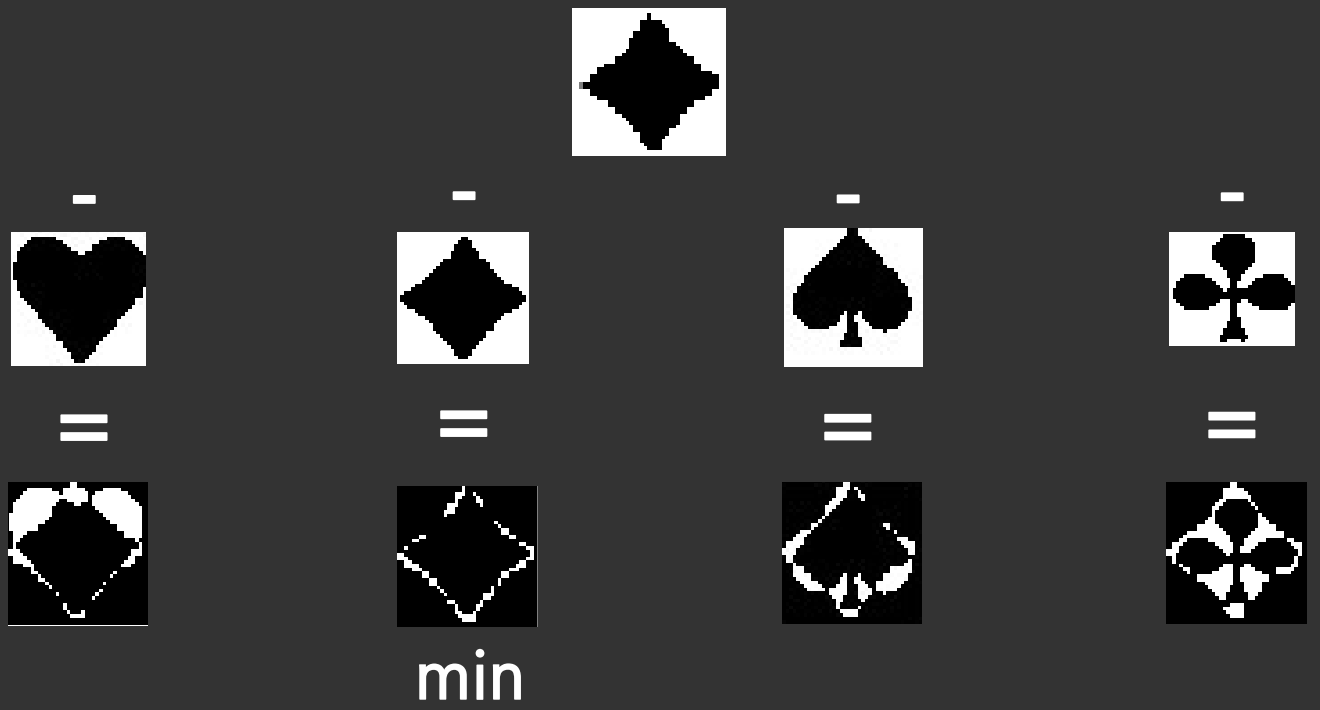
$$\min\left(\left\|\begin{pmatrix} x_{vbox} \\ y_{vbox} \end{pmatrix} - \begin{pmatrix} x_i \\ y_i \end{pmatrix}\right\|\right)$$

3. template matching
4. crop for symbol counting



TEMPLATE MATCHING:

1. load predefined templates
2. difference of input symbol and each template
3. minimum of difference images is symbol



NEED TO SOLVE:

- implementation of ccl
- redo test data (better exposure, additional deck)

NO NEED TO WORK ON YET:

- cards not parallel to image edges
- self implemented functions extremely slow
- costly function calls (relabeling, iterating over all bounding boxes)
- version handling