Computer Vision
Homework #4

RANSAC-based Object Detection

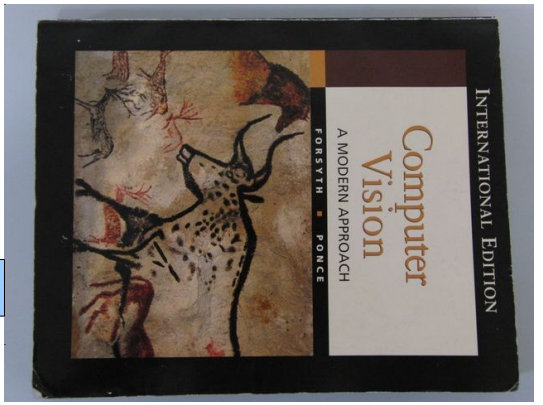
scene

H1

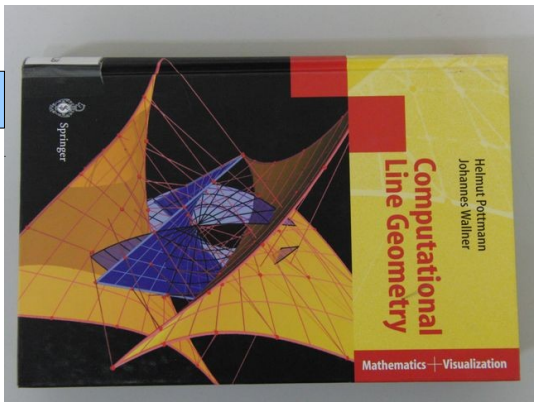
H2

H3

book1



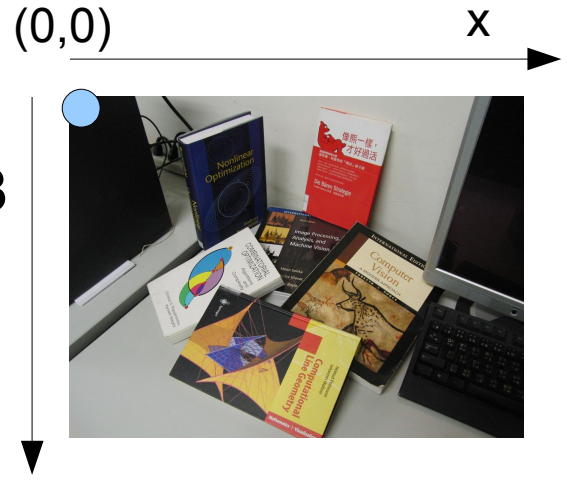
book2



book3

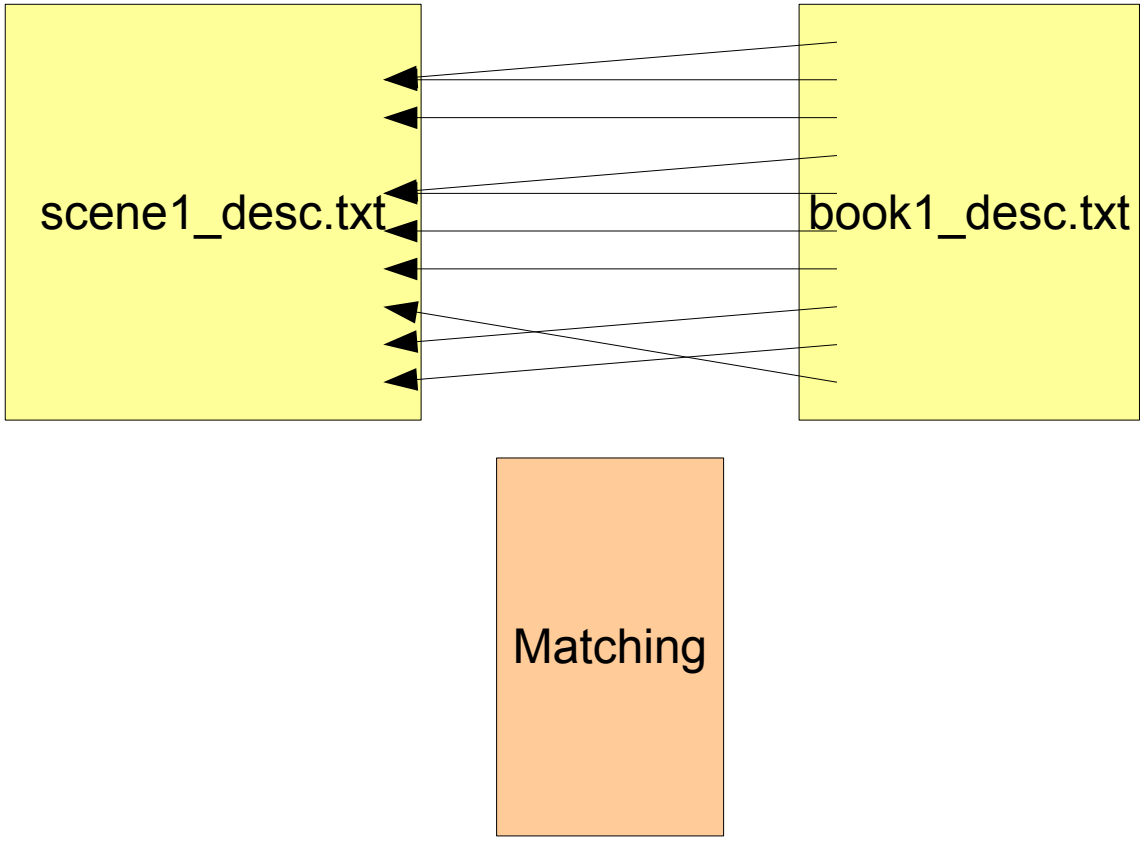
Note

- We provide scene image and three book images for visualize your results. (im.zip)
- We provide positions of interest points and SIFT descriptors of these points. (position.zip, sift.zip)
- Position file format
  - X-coordinate Y-coordinate
  - Note: the 0 0 corresponds the upper-left corner in the image. So column=x+1 and row=y+1.
- Descriptor file format
  - Each line is sift descriptor of the corresponding interest point. SIFT descriptor is an array of 128 variables.



Problem (1)

- Find point correspondence between book image and the scene image by using Euclidean distance in feature space.



(A) For each interest point on the book, find the nearest feature in scene and keep the matching scores.

(B) Show correspondence.

(C) Repeat the same procedure for other two books.

Note

- Please write your method in detail.
- Please show three detection results (three books) for each problem.
- Please answer the questions in the homework assignment.