NTUST course: Computer Vision and Applications (CI5336701, 2018 Spring)

Homework#2：Using homography to swap the covers of two books

Date Due：2018. Apr. 9th, PM11:55。

Description

---

1. Writing a program for reading a JPG image, calculating homography mapping matrixes between the cover regions of two books, and swapping them. (choose your tools, ex. C++/C, openCV, Matlab).
   請撰寫程式讀取圖檔，計算兩本書封面區域的 homography，並將兩者交換。(使用您擅長的工具,可用 C/C++, OpenCV, Matlab)
2. Please manually define the pixel-region of the covers as masks, and no need to write mouse interface for picking up the points.
   請自行手動用其他軟體決定封面頂點與區域即可，不需要寫滑鼠操作介面點選角點。
3. After you swap the regions, please save it as another file name (named student ID).
   當你將圖片區域交換後，請將影像另外儲存成一張照片(用學號當名稱)。
4. In this homework, you can use least-square method, DLT (SVD), openCV function (ex , findHomography), Matlab (all are revealed in class) or any other ALGORITHM to archive this purpose. Note: please do NOT directly use any commercial software for this assignment.
   你可使用上課講的方法，或任何可達到此目的之演算法，但請不要直些使用商用軟體達到該目的。
5. Deliverable: There are three types of data you should provide: 1) Source code in C++/C or Matlab, with simple comment. 2) Execution file (.exe) for this example. 3) One page description saved in ppt, doc, or pdf file format. Please zip all your files, then, upload on moodle by due 4/9 PM11:55.
   請繳交 3 種檔案 1) 程式原始檔，並在內文加簡易註解，2)執行檔，該執行檔可執行老師提供的檔案，3)一頁簡易說明 (以 ppt, doc 或 pdf 儲存)。請將所檔案壓縮，並在期限內 4/9 晚上 PM11:55 前傳到 moodle。

Hint: the snapshot of images in this assignment:


---