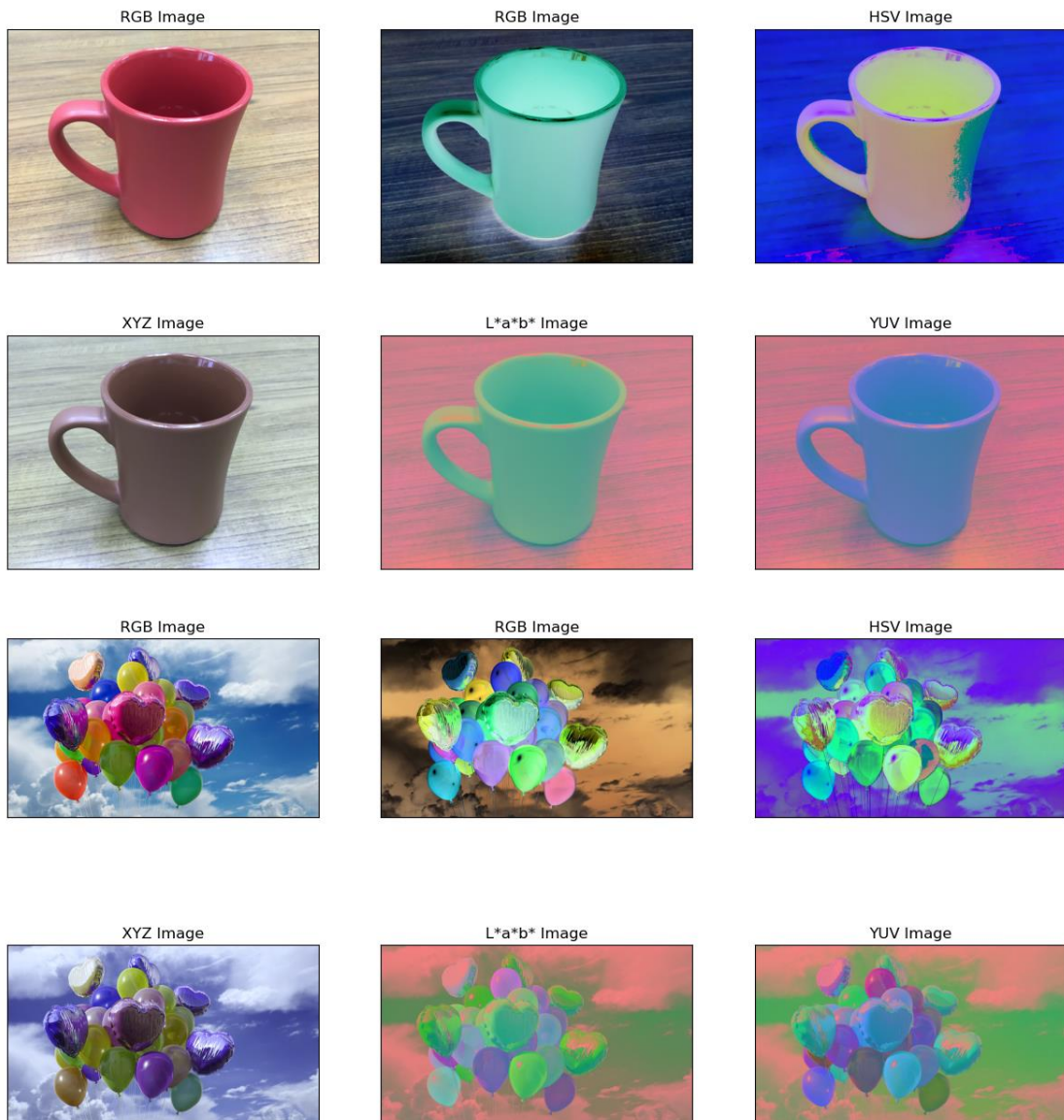


Homework 5 R12631001 許喬淇

Part 1: Color Model Conversion

使用 `cv2.imread()` 讀取影像，再使用 `cv2.cvtColor()` 轉換圖像色彩



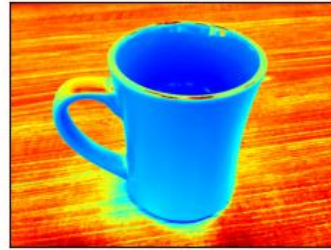
Part 2: Pseudo-color Image

使用 `cv2.applyColorMap()` 建立假色彩和 color bar，且提供四種轉換方法供使用者選擇(jet、hsv、cool、hot)。

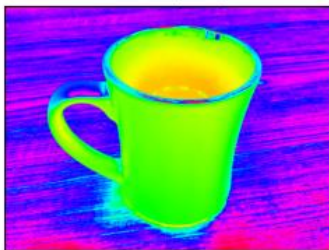
Input Grayscale Image



Result(jet)



Result(hsv)



Result(cool)



Result(hot)



Part 3: Color Segmentation

使用 `sklearn.cluster` 函式庫中之 `KMeans()` 函式進行 k-means 分群，當 k 值越大，結果圖越接近真實影像。

Image Segmentation(k = 2)



Image Segmentation(k = 3)



Image Segmentation(k = 4)



Image Segmentation(k = 5)



Image Segmentation(k = 6)



Image Segmentation(k = 10)



分別使用 RGB、HSI、L*a*b*三種 color planes 進行顏色分割

Image Segmentation by RGB



Image Segmentation by HSI



Image Segmentation by Lab



K = 2

Image Segmentation by RGB



Image Segmentation by HSI



Image Segmentation by Lab



K = 4