3-feature-detection-and-matching

November 28, 2024

0.1 Lab Exercise 3: Feature Detection and Matching

- **Objective:** Implement feature detection algorithms and matching between images.

- **Task:** Use SIFT or SURF to detect features in two images and apply feature matching techniques like brute-force matching or FLANN.

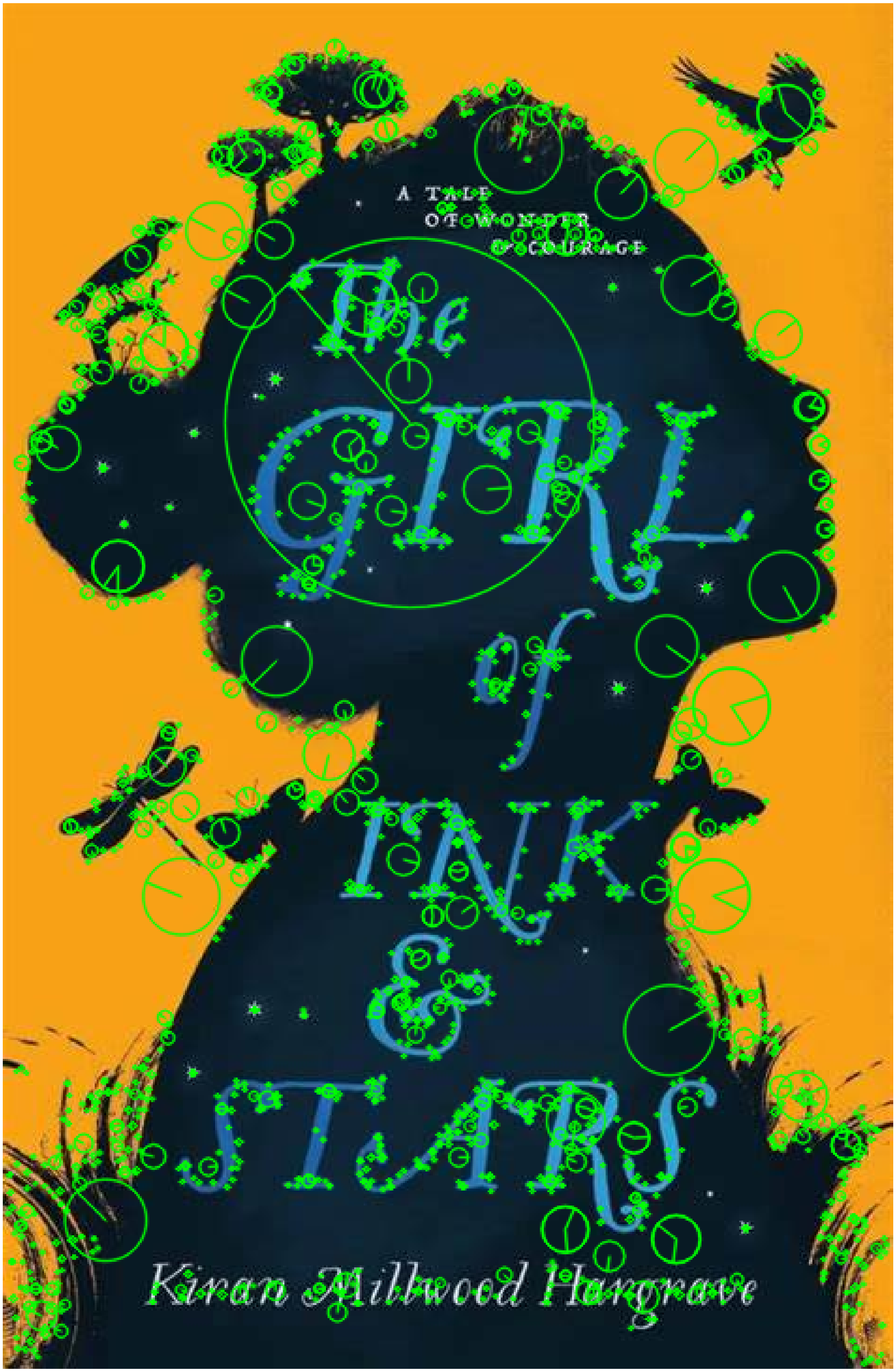
[3]:

```
# Importing the libraries
import cv2
from google.colab.patches import cv2_imshow # Import cv2_imshow for Colab


# Reading the image and converting into B/W
image = cv2.imread('/content/Book Cover.jpg')
gray_image = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)

# Applying the function
# Since SIFT is no longer patented, it's likely in the main 'cv2' module
sift = cv2.SIFT_create()
kp, des = sift.detectAndCompute(gray_image, None)


# Applying the function
kp_image = cv2.drawKeypoints(image, kp, None, color=(
        0, 255, 0), flags=cv2.DRAW_MATCHES_FLAGS_DRAW_RICH_KEYPOINTS)
cv2_imshow(kp_image)  # Use cv2_imshow instead of cv2.imshow
cv2.waitKey()
```


A TALE
OF WONDER
& COURAGE
The GIRL of INK & STARS
Kiran Millwood Hargrave

[3]:

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-1
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[2]:

```python
# Importing the libraries
import cv2
from google.colab.patches import cv2_imshow # Import cv2_imshow

# Reading the image and converting into B/W
image = cv2.imread('/content/Book Cover.jpg')
gray_image = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)


# Applying the function
fast = cv2.FastFeatureDetector_create()
fast.setNonmaxSuppression(False)


# Drawing the keypoints
kp = fast.detect(gray_image, None)
kp_image = cv2.drawKeypoints(image, kp, None, color=(0, 255, 0))

# Use cv2_imshow instead of cv2.imshow
cv2_imshow(kp_image)
cv2.waitKey()
```

The
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[2]: -1
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[2]:
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