# Homework 2

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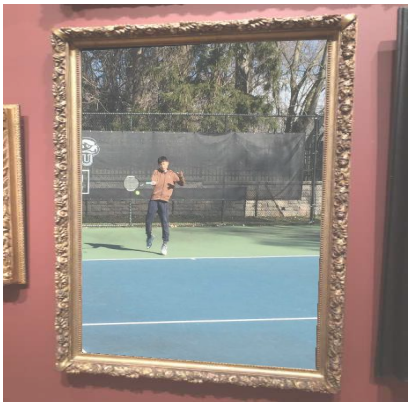
After passing the test cases, I ran the `hw2.py` on two images with the following commands

```
$ python3 hw2.py rectify own_rectify_input.jpg \
50 595 26 2 447 47 416 516 own_rectify_result.jpg
$ python3 hw2.py composite own_composite_input_1.jpg \
own_composite_input_2.jpg 90 537 89 72 369 51 354 564 \
own_composite_input_mask.png own_composite_result.jpg
```

And the following is the comparision between the original picture and the resulting picture:

| ***Original Image*** | ***Rectified Image*** |
| --- | --- |
|  |  |
| ***Original Image*** | ***Composed Image*** |
|  |  |

## Struggles

The most frustrating one happens when I was trying to pass the test case for `test_compute_H()`. I spent

three hours trying to figure out if I somehow misimplemented, only to discover numpy produces inconsistent eigenvectors on different machines with the same paramater.

Shortly after fixing that issue, I struggled with `rectify_image()` as to how to put everything together. The inverse homography was unintuitive and I spent a lot of time fighting the coordinates inconsistency (formulas assumed images' first coordinate is column while implementation is the opposite)

The other thing is to create a mask for the composition of picture. I ended up using Figma (https://www.figma.com/file/RNnmuLHYsyXYvfxZAGqXdJbb/Dummy-Mask?node-id=0%3A1) to create the mask.

> Written with StackEdit.