

Perspective Transform Project

Nowadays, some banks have mobile apps which can be used to deposit a check (cheque) using as input a picture of the check. For this project, you will create a check image preparation program, so that we can easily feed your output images to a simple check reader. You will be given a set of images of checks taken at different camera orientations and positions. The images may be a check placed on some surface, or held by a person or a group of people holding a huge check. The checks may be in different color and design. Your program will extract only the relevant check portion from the image and transform the check image so that it looks like the image is taken while the camera is pointed directly towards the middle of check and the camera is parallel to the check surface. Your program will display both the original image and the corresponding resultant transform image.

In designing your program:

- You may use all of the functionality of OpenCV, Deep Learning, Machine Learning and Python libraries.
- You must use functions mentioned in the following link as part of your project for perspective transform.

https://docs.opencv.org/4.x/da/d54/group_imgproc__transform.html

You may find the tutorial in the following link to be useful:

https://docs.opencv.org/4.x/da/d6e/tutorial_py_geometric_transformations.html

Provided files

- Sample check images.
- The python script **proj3.py** for reading a folder of images as basic for your program.

Evaluation

- We will visually evaluate whether checks are correctly extracted, transformed and displayed as expected.
- We will visually check that the checks are not upside down.
- Bonus 5 points: If your program can read and display hand written amount correctly using any Machine Learning or Deep Learning models.

What you need to submit

1. Python source code of your program. Please name it **proj3.py**.
2. Documentation that explains your approach and test results.