Started 12:45

Wanted to look into aspect ratio stuff. Results showed a 100% group congruency rate, though it is yet unclear if it solved false congruency (for which it was created, to solve some cases).

Low effort, low reward implementation. Worth doing?

Also spent this time making the results print out the group congruence rate at the top of the file, so I don’t need to view it myself.

# Automatic Perspective Transform

Detect corners and warp image to no longer be in perspective. Then apply stuff.

Maybe only do this when a square shape has been detected. Note: Check if a shape is consistently detected.

Followed this tutorial for finding contours: <http://docs.opencv.org/2.4/doc/tutorials/imgproc/shapedescriptors/find_contours/find_contours.html>

This didn’t prove fruitful for the test case: the Christmas card. Canny edge detection failed to capture the edge of the card within a reasonable threshold.

Perhaps moments would be better? No idea what those are, let’s look into it later!

# Haar Feature-based Cascade Classifier

Did some reading, and there are some similarities (very few, essentially different mind you) to the “Haar Feature-based Cascade Classifier for Object Detection”

“The object detector described below has been initially proposed by Paul Viola [[Viola01]](http://docs.opencv.org/2.4.13/modules/objdetect/doc/cascade_classification.html#viola01) and improved by Rainer Lienhart [[Lienhart02]](http://docs.opencv.org/2.4.13/modules/objdetect/doc/cascade_classification.html#lienhart02).”

This teaches a classifier using a bunch of images of a normalised size, which then trains itself to recognise an image.

From the OpenCV documentation explanation: “The word “cascade” in the classifier name means that the resultant classifier consists of several simpler classifiers (stages) that are applied subsequently to a region of interest until at some stage the candidate is rejected or all the stages are passed”

Very similar!

# OCR

Later on looked into the Tesseract OCR engine for text extraction from images. That will be a BIG boost to recognition. The main question is whether it is fast enough.

Made a bunch of notes in the notebook, pages marked with **BLUE**