## Create MacBeth Color Calibration finders and Color Adjustment algorithm

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- Link: The feature request
- Status: **Draft**
- Platforms: **All**
- Complexity: 1-2 man-months

## Introduction and Rationale

Color calibration is extensively used in film and for photometric needs, but OpenCV neglects this basic area. We need to create a couple of functions that will * Find a MacBeth ColorChecker chart and its homography (robust please to someone holding its corners by hand) * Return the colors * Run a color adjustment algorithm on it

## Proposed solution

- Create a function that will robustly find common MacBeth charts (allowing for partial occlusion of hands holding the corners) and their homography
  - This one
  - and the standard one
- Rectify the chart and find each color value in order (detecting partial occlusion of say hands holding he corners)
- Apply a color correction algorithm
  - Linear correction matrix
  - More extensive list of linear and polynomial corrections

## Impact on existing code, compatibility

Overall, the external API will not change.

## Possible alternatives

Many, you could find the chart and correct colors using a trained deepnet. It would be good to create the above functions and then maybe a toolbox app that ran them.

## References

- Macbeth chart
  - Linear correction matrix
  - More extensive list of linear and polynomial corrections
  - Vinyl Macbeth Chart
  - Standard Macbeth chart

- Rectify the chart and find each color value in order (detecting partial occlusion of say hands holding he corners)