

Project 2 Advanced Lane Finding Writeup

December 13, 2019

1 Project Goals

The goals / steps of this project are the following:

- * Compute the camera calibration matrix and distortion coefficients given a set of chessboard images.
- * Apply a distortion correction to raw images.
- * Use color transforms, gradients, etc., to create a thresholded binary image.
- * Apply a perspective transform to rectify binary image ("birds-eye view").
- * Detect lane pixels and fit to find the lane boundary.
- * Determine the curvature of the lane and vehicle position with respect to center.
- * Warp the detected lane boundaries back onto the original image.
- * Output visual display of the lane boundaries and numerical estimation of lane curvature and vehicle position.

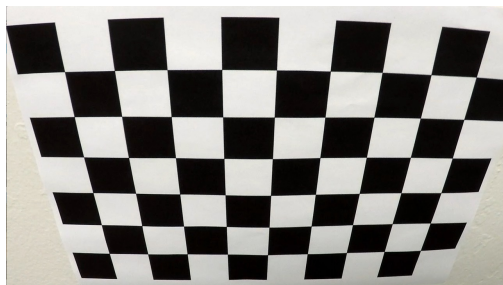
2 Write up

In this section I will go over the pipeline code in project2.py

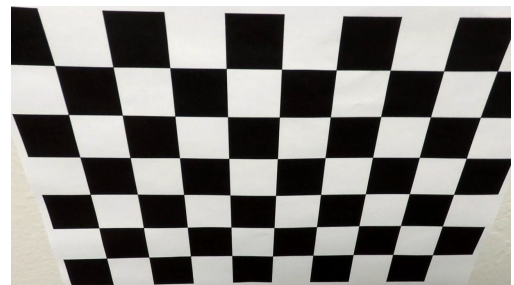
2.1 Camera Calibration and Distortion Correction

The first step is to calibrate the camera using the provided figures using the defined function *cameraCalibration* and *undistort*.

The first function defines object and find image points for camera calibration using *cv2.findChessboardCorners()*. The second function creates undistort images with *cv2.calibrateCamera()* and *cv2.undistort()*. An example of the figure before and after distortion correction is shown in Figure 1a and Figure 1b .



(a) Before Distortion Correction



(b) After Distortion Correction

2.2 Create Color Thresholded Image

The function *thresholdImage* is used to create the binary threshold iamges