

EE368 Project Proposal

“Nutrition Facts for a Healthier Lifestyle”

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Background and objectives

One of the new trends for health-conscious folks or dieters is to record and track one’s nutrition in the form of calorie intake, macronutrients, or other measures. One of the most common obstacles for people using apps such as MyFitnessPal is that the food they are eating isn’t within the app’s pre-determined database. Unfortunately, this cannot be easily remedied using images for raw foods or home-cooked meals, but it *can* be done for packaged raw ingredients or foods that come with a nutrition facts label. This project aims to pre-process images of nutrition labels and then use OCR to extract the nutritional information.

This project will not make use of an Android device.

Milestones

- **Locally adaptive thresholding:** to remove any lighting irregularities or glare (everything will be converted to B&W, since some labels are printed in color)
- **Median/majority filter:** to remove any potential noise
- **Correction for any distortion:** labels are sometimes printed on round containers or captured at an angle, so this must be fixed prior to OCR
- **Line and word segmentation:** one of the more popular techniques for this step is the Hough transform. First we will separate out each line from the label (fortunately, the labels are nicely laid out in table form), and then we will separate out the words and numbers.
- **Categorization:** recognizing which nutrition is in question and storing it accurately

Sample References

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N. Priyanka, S. Pal, and R. Mandal. *Line and Word Segmentation Approach for Printed Documents*. RTIPPR, 2010.