Team: Solo

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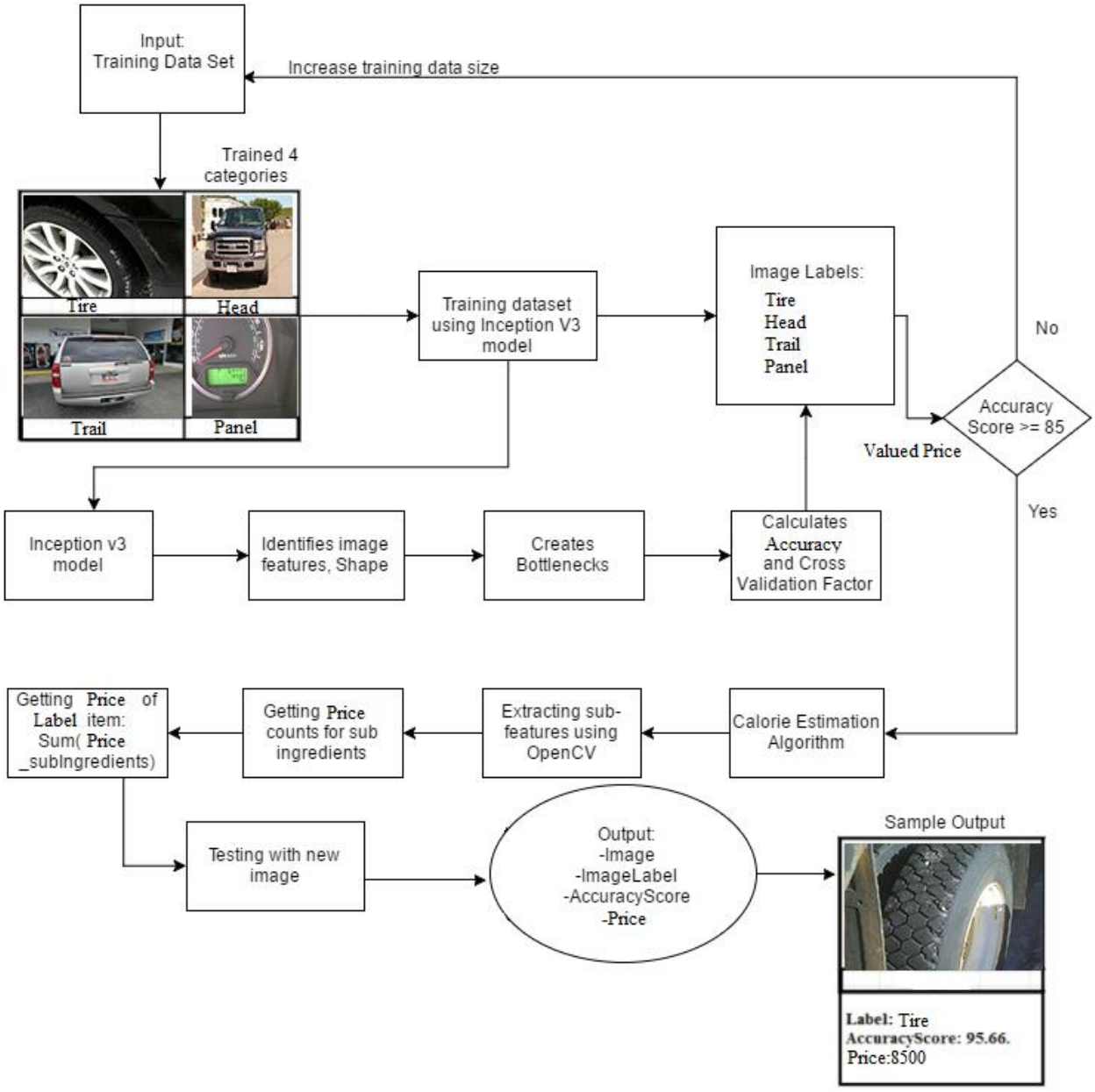
1. Topic: Trade-In Car Price Prediction

   Problem Explanation: A trade-in vehicle is a vehicle a car shopper surrenders to a car dealer in whole or, usually, part payment of a new car purchase. You will be provided a dataset that contains images of customer trade-ins with their associated pricing. Your challenge is to find a correlation between vehicle images and its pricing and predict the value/price/ranking of a trade-in given images. You must use machine learning to solve this challenge.

2. Application Features: Given used car images, predict its value or price.
3. Proposed Solution Architecture:
   We divide the dataset into four categories: tire, front, rear, interior. Due to the lack of sufficient images to train a high-accuracy solution, we decide to incorporate inception model to exploit its latent features to distinguish different cars.
   While we were trying to download the training images, we found most of them are not available. Therefore, we propose to process each of the four categories images separately. The objective of this work is feeding in an image of a car, output the estimated price. Thus, we reorganized the dataset and relabel them for training. The Inception model is utilized to fine-tune on our dataset. The labels are the price and the inputs are the images. The architecture is illustrated in the figure below.


Input:
Training Data Set
Increase training data size
Trained 4
categories
Tire
Head
Trail
Panel
Training dataset
using Inception V3
model
Image Labels:
Tire
Head
Trail
Panel
No
Accuracy
Score >= 85
Valued Price
Yes
Inception v3
model
Identifies image
features, Shape
Creates
Bottlenecks
Calculates
Accuracy
and Cross
Validation Factor
Getting Price of
Label item:
Sum(Price
_subIngredients)
Getting Price
counts for sub
ingredients
Extracting sub-
features using
OpenCV
Calorie Estimation
Algorithm
Testing with new
image
Output:
-Image
-ImageLabel
-AccuracyScore
-Price
Sample Output
Label: Tire
AccuracyScore: 95.66.
Price:8500