Auto Category Detection and Items Prohibited Detection

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Project Background

Project Goal

Find an auto and fast detection system to monitor and avoid prohibited items through product images and titles in marketplaces.

Personal Motivation

During developing my marketplace application, I had the idea to make a good experience for both sides (Customers & Company).

Project Plan

1. Review the previous experiences of the leading companies in this field.

2. Get the right and easier way to implement this approach from scratch.

3. Select machine learning models can fit with this project.

4. Deliver the project as a very light version, then improve it in the future during data expanding.

Project Steps

A quick headlines review of project steps from start to end.

Deployment

I used Flask API as backend to deliver this project.

04

Create text classification model

I selected KNN model.

03

Create image classification model

As a best option, I have used CNN model.

02

Data Gathering

Since I created my own datasets.

01

Data Sources

CIFAR 10

Consists of 60000 32x32 color images in 10 classes.

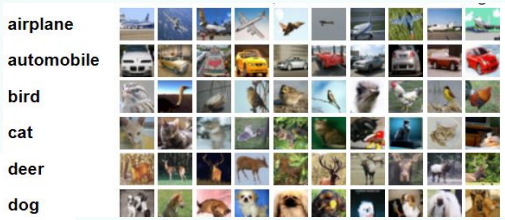


Image Classification

My Own Image data

I collected ~ 600 60x80 color images.

Image Classification

My Own Text data

I collected ~ 2800 words.

Text Classification

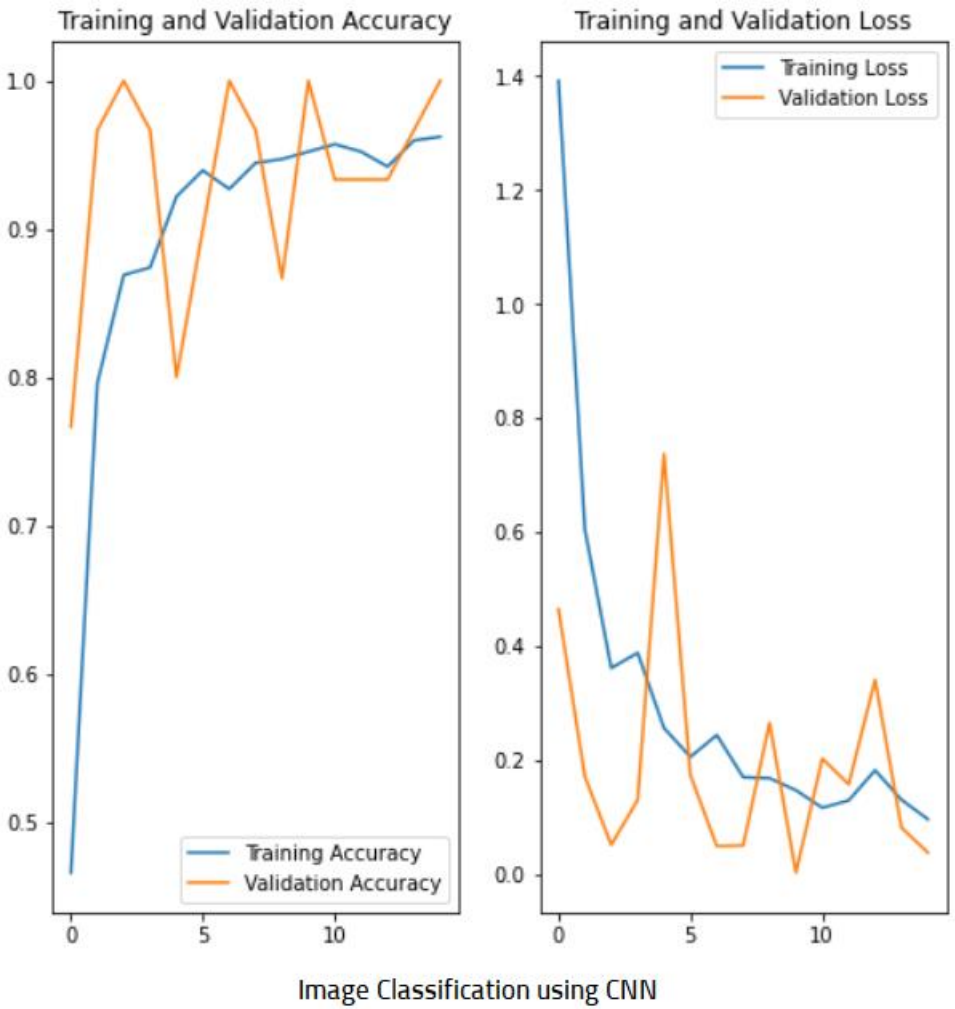
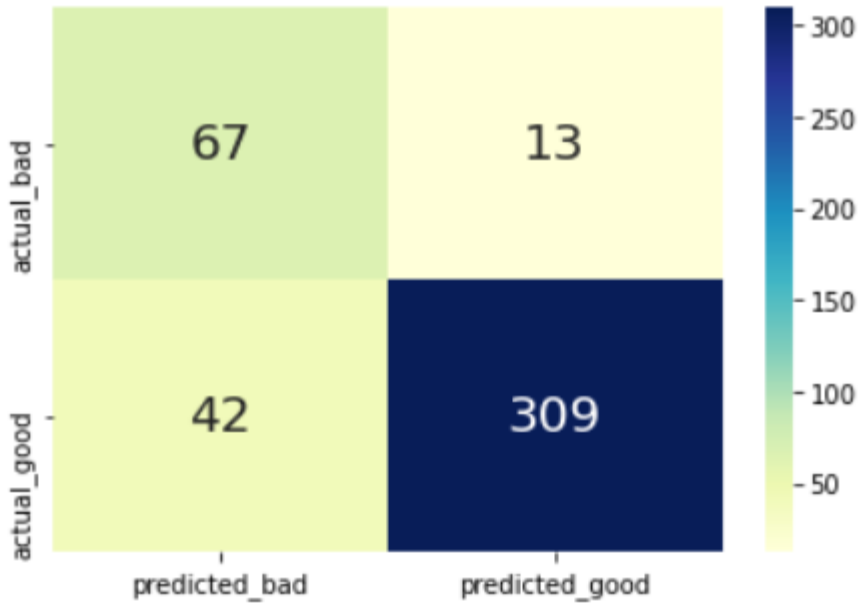


Image Classification Training and Validation



	precision	recall	f1-score	support
bad	0.61	0.84	0.71	80
good	0.96	0.88	0.92	351
accuracy			0.87	431
macro avg	0.79	0.86	0.81	431
weighted avg	0.90	0.87	0.88	431

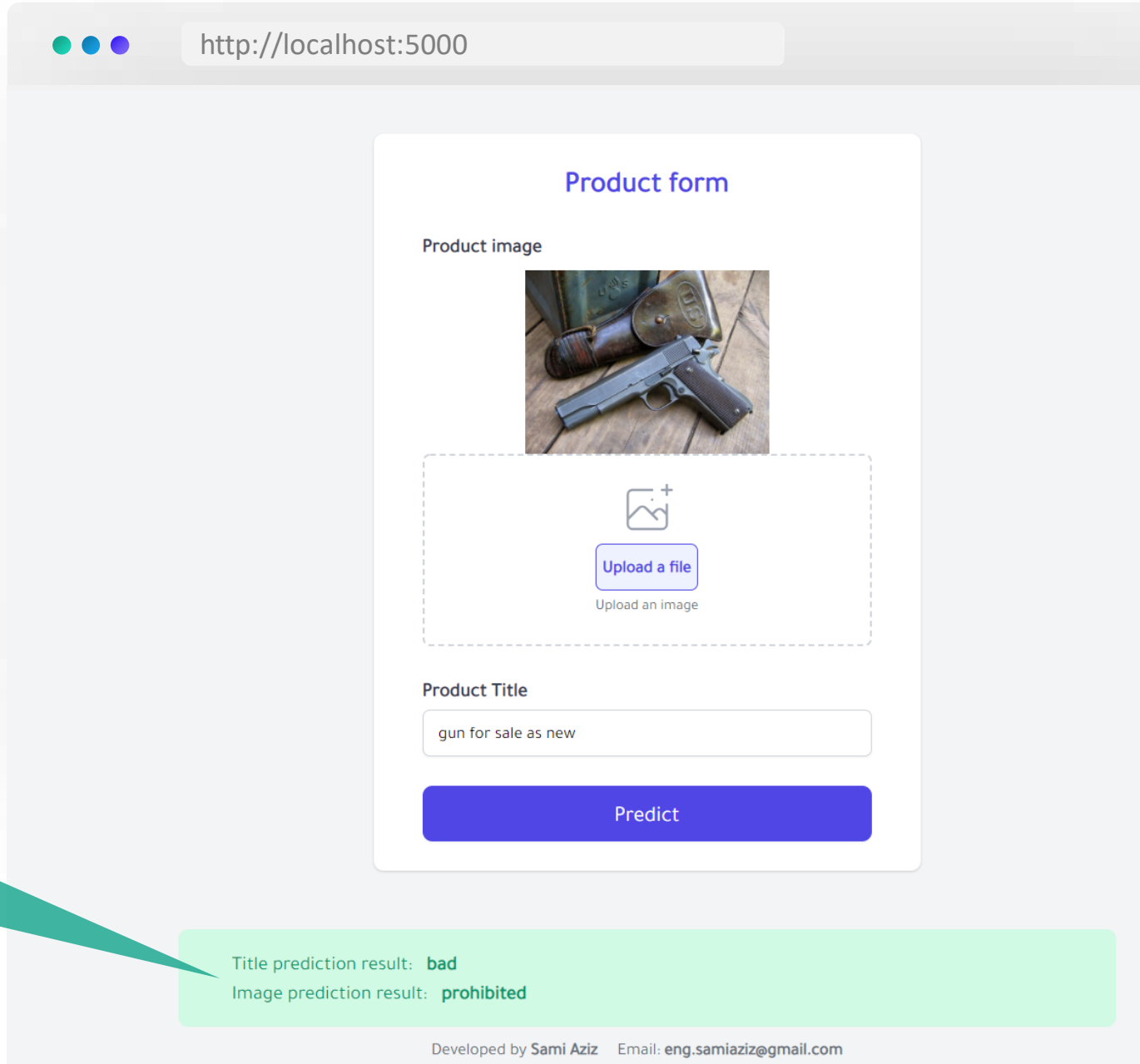
Text Classification using KNN

Text Classification Test

Project Deployment

In this figure, I am displaying an example of models predicting in deployed project, using Flask.

This is a good example I implemented it in the deployment. As we can see the models predicted (Text as **Bad** and Image as **Prohibited item**)



Thank You!