Google Landmark Recognition Challenge
Project 5 - Group 4

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Outline

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Introduction

- Remind the name of each visited landmarks
- Optimizing the model
- Challenge the Neural Network in compare to ML Classifiers

Data

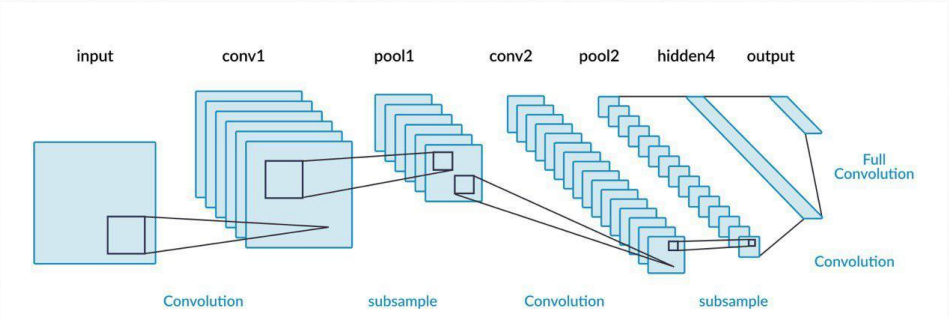
- Google-Landmarks Dataset [1]
- Sample the data set to work on 20 labels
  - Each including 4890 image
  - 80 % for train and 20% for test

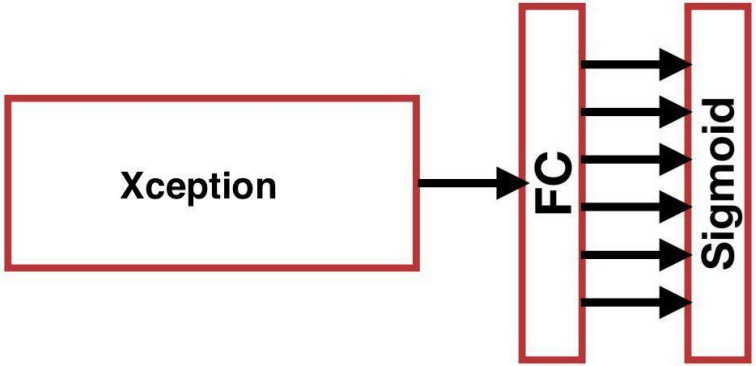
Base Model

- Preprocessing
  - REduce size of the images
  - Gray Scale the color
- Feauture Extraction :
  - Histogram of oriented gradients (HOG) [2]
- Classification Model:
  - SGD
  - Boosted Decision Stump (Still Running!!)

Advance Model

- Simple CNN:
  - 3 layered CNN (128 * 3* 3 - 64 * 3 * 3 - 32 * 3 * 3 - FC 32 - FC 20)
- Using pretrained Model:
  - Using xception [3] for extracting features
  - Using 3 layered FC (400 - 100 - 20)





Result

Model	Train Accuracy	Test Accuracy	Epoch
Base model (SGD)	45	5	-
Simple CNN	82.83	**61.98**	6
Simple CNN	**91.87**	58.86	10
Xception features	72.62	49.48	100
Xception features	91.16	50.54	200

References

[1] https://www.kaggle.com/google/google-landmarks-dataset

[2] Dalal, Navneet, and Bill Triggs. "Histograms of oriented gradients for human detection." 2005.

[3] https://github.com/tensorflow/models/blob/master/research/deeplab/core/xception.py

Questions?

Thanks :)