





Capstone Project #2: Image Classification & Object Detection

By Jerome Gonzaga





**How can I help?
(Goal For Project)**

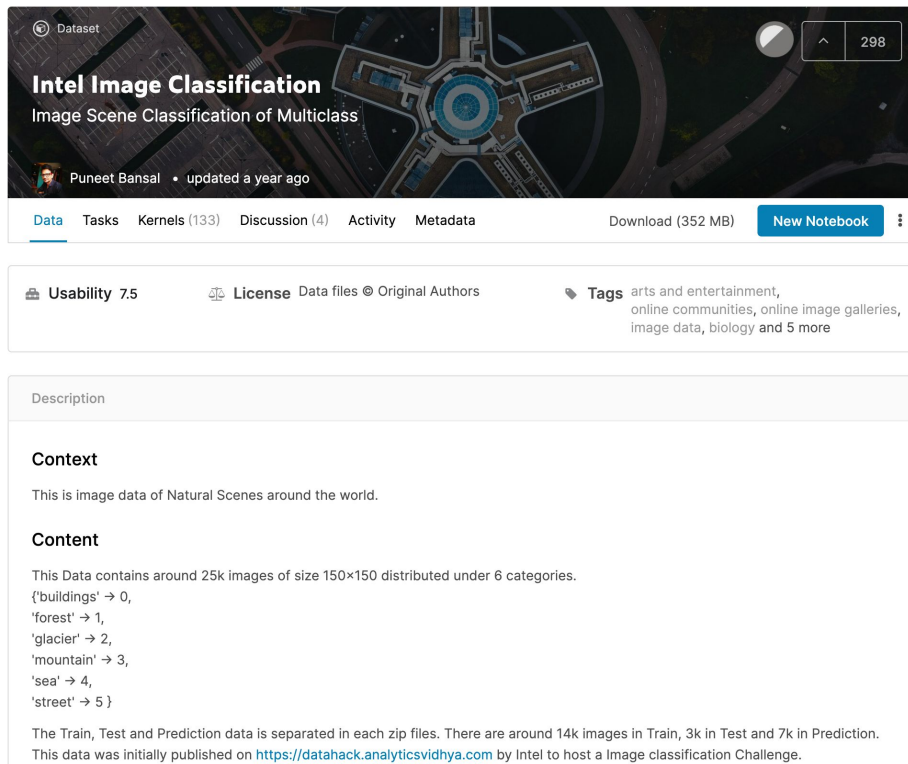
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1. Determine what kind of document is being reviewed (**Classification**)
 2. Determine whether all the necessary components are on the document (**Object Detection**)

Approach:

Use dataset from Kaggle to build a deep learning model that can accurately classify images to a particular category. Then, build an object detection model to determine what objects are in each image.

Dataset

Intel Image Classification
(<https://www.kaggle.com/puneet6060/intel-image-classification>)



The screenshot shows the Kaggle dataset page for 'Intel Image Classification'. The header features a satellite image of a city with a large circular building. The title 'Intel Image Classification' is prominently displayed, followed by the subtitle 'Image Scene Classification of Multiclass'. Below this, the creator's name 'Puneet Bansal' and the update status 'updated a year ago' are shown. A navigation bar includes links for 'Data', 'Tasks', 'Kernels (133)', 'Discussion (4)', 'Activity', and 'Metadata', along with a 'Download (352 MB)' button and a 'New Notebook' button. A section for 'Usability 7.5' and 'License Data files © Original Authors' is present, followed by a 'Tags' section listing 'arts and entertainment', 'online communities', 'online image galleries', 'image data', 'biology' and '5 more'. The 'Description' section is expanded, showing 'Context' (image data of natural scenes) and 'Content' (25k images of size 150x150 distributed under 6 categories: buildings, forest, glacier, mountain, sea, and street). It also mentions that the data is separated into Train, Test, and Prediction sets.

Dataset

Intel Image Classification

Image Scene Classification of Multiclass

Puneet Bansal • updated a year ago

Data Tasks Kernels (133) Discussion (4) Activity Metadata Download (352 MB) New Notebook

Usability 7.5 License Data files © Original Authors Tags arts and entertainment, online communities, online image galleries, image data, biology and 5 more

Description

Context

This is image data of Natural Scenes around the world.

Content

This Data contains around 25k images of size 150×150 distributed under 6 categories.

{ 'buildings' → 0,
'forest' → 1,
'glacier' → 2,
'mountain' → 3,
'sea' → 4,
'street' → 5 }

The Train, Test and Prediction data is separated in each zip files. There are around 14k images in Train, 3k in Test and 7k in Prediction. This data was initially published on <https://datahack.analyticsvidhya.com> by Intel to host a Image classification Challenge.

Cleaning Up The Dataset

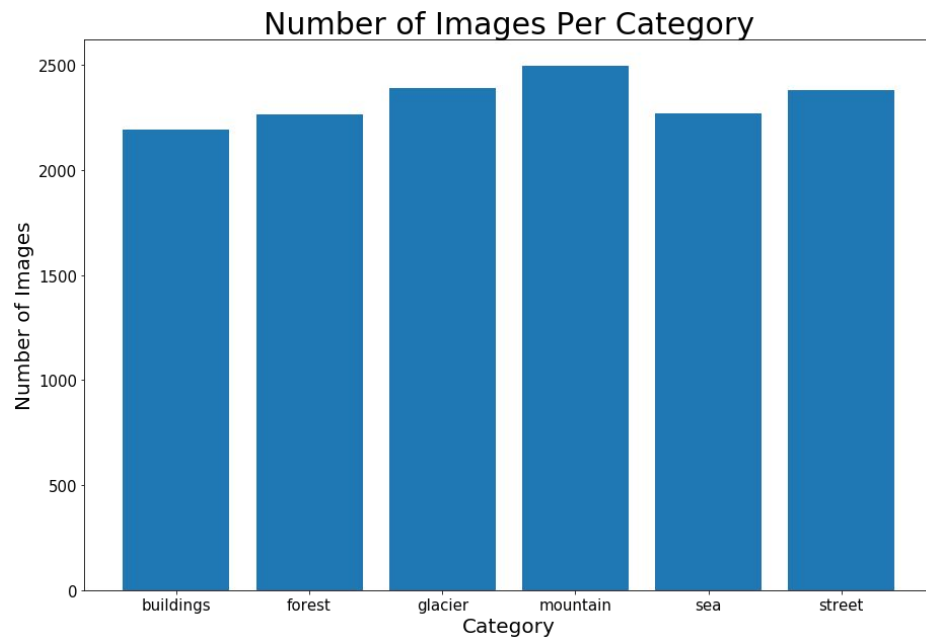
Original Dataset

Training Images	Testing Images	Unlabeled Images
14034	3000	7301

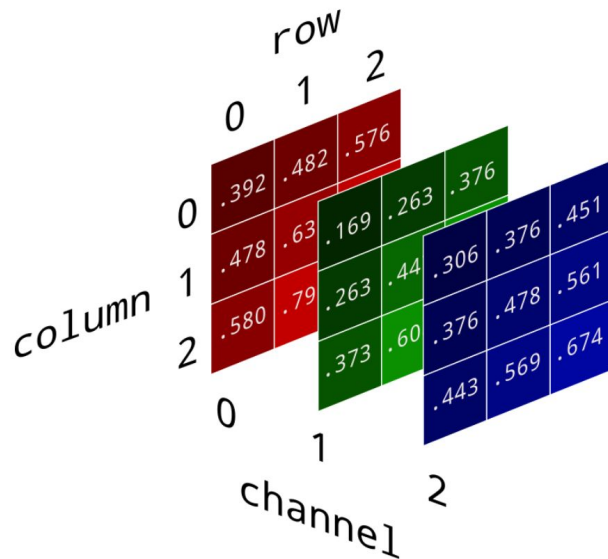
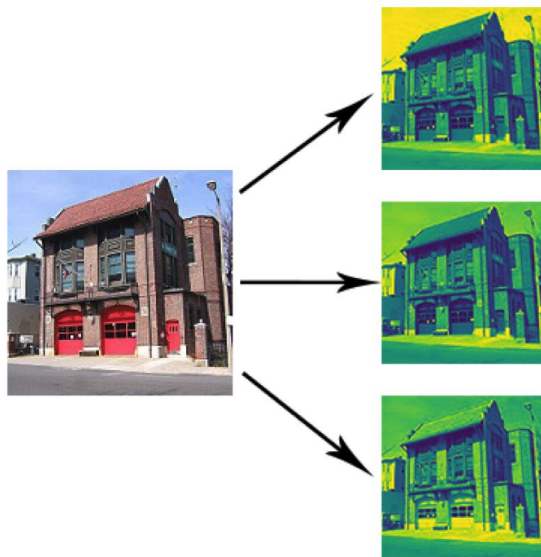
Final Dataset

Training Images	Testing Images	Unlabeled Images
13986	2993	7288

Cleaning Up The Dataset



Transforming The Dataset



Feeding the Model

