

Training and Internship
On
Applied Machine Learning and Data Science
(Course Code: 002)

Interim Report
On
Image Classification Project

Prepared for:
Indian Institute of Technology, Kanpur

Submitted by:

Akshat Chand

Sneha Dahiya

Tanya Gupta

Ankita Singh

Siddharth Singh

Team Name:

Brute Force

Problem Statement: The Image classification task, hosted on Kaggle, requires us to build the best model to classify the images provided in the dataset into respective classes.

Specifications of the Problem: The provided dataset consists of 200 classes. Each class has 450 training images, 50 validation images, and 50 test images. The training, validation, and test sets were provided with images and bounding boxes as annotations. However, the task involved only to predict the class label of each image without localizing the objects. The test set consisted of no labels.

The benefit of the Project: Image Classification holds the potential for a wide range of uses and in various industries. Different businesses possess massive databases with visual content, which is challenging to manage and make use of and hence, may end up uncategorized and useless. Fortunately, Classification of images through machine learning is a crucial solution for such a problem. With a useful model for image classification, companies can easily organize and categorize their database as it allows for automatic Classification of images in large quantities, helping companies monetize their visual content without investing countless hours for manual sorting and tagging.

Approach: The Task aims to classify images, which would be our input, based on its visual content. Convolution Neural Networks are a powerful deep neural network technique. These networks preserved the spatial structure of a problem and were built for image recognition tasks such as classifying an image into respective classes. CNN is much known because people achieve a state of the art results on complex computer vision tasks. Convolution neural networks have been extensively used for automatic image classification systems, and hence we decided to build our model based on the CNN architecture.

Expected Outcome: The outcome expected of our project is a neural network based on the CNN architecture, which classifies the images provided in the dataset efficiently with high accuracy.