Transfer Learning for Scene Recognition

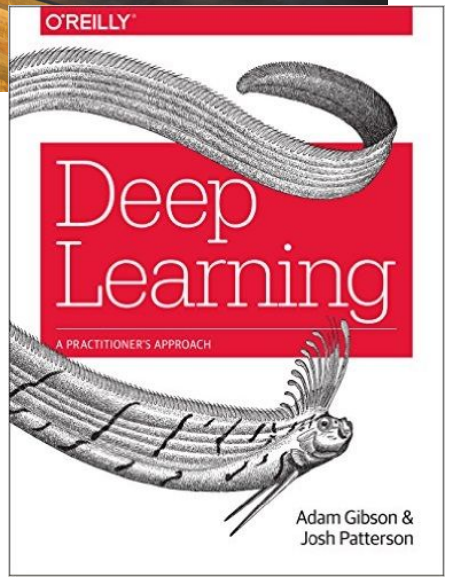
Datuluna Dilangalen and Hans Capiral

Our Motivation

We wanted to create a model that would make use of the vast online graphic content and recommend to users items and places that they might be interested in, based on the recent events or scenes that they recently went to or took a photo of and shared on popular social media platforms.

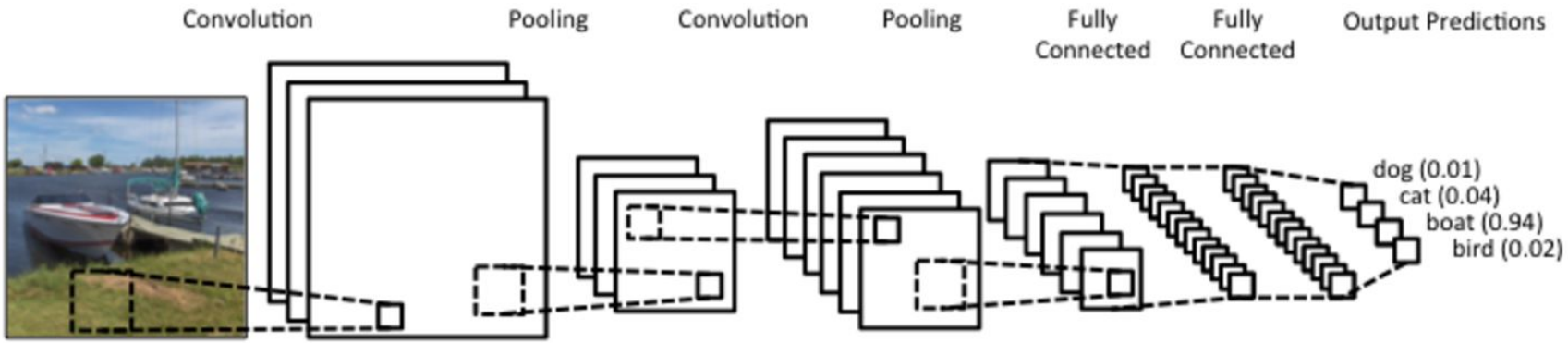
For instance, you’re on a vacation and decided to go skiing. Once you share a picture of you skiing online, an ad might pop up that would recommend you to buy a new ski set.

Or if you're in a coffee shop, or library, the model AI might recommend you playlists that would suit the mood of the place or new drinks and new books to try out.

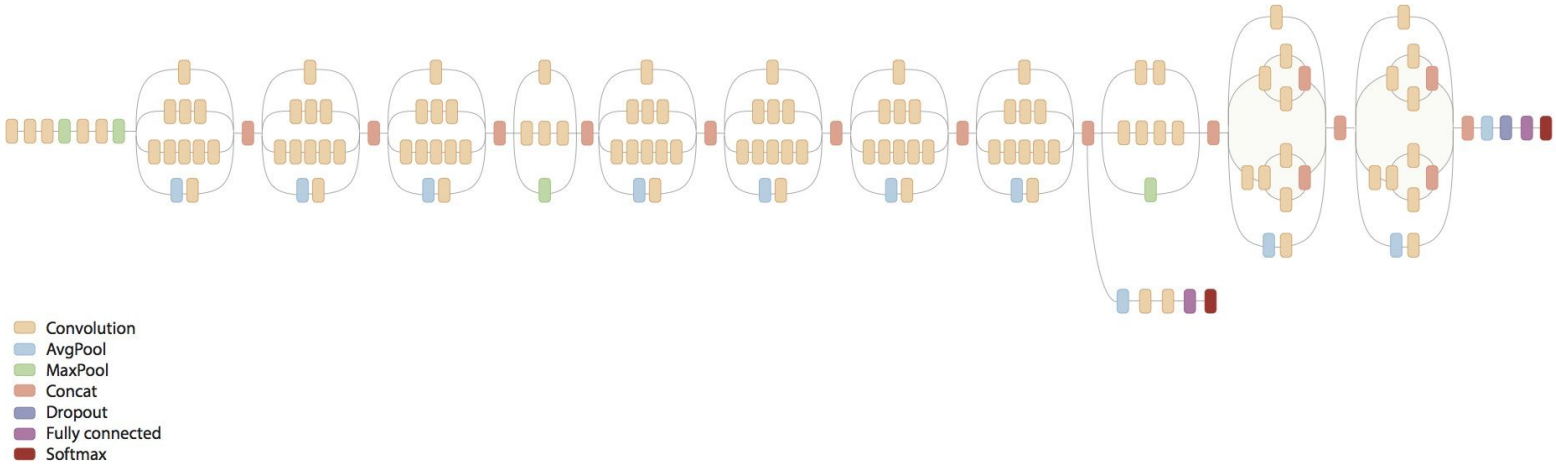


Or if you're in a coffee shop, or library, the model AI might recommend you playlists that would suit the mood of the place, or new drinks and new books to try out.

Our Solution



Convolutional Neural Networks



Transfer Learning with Inception V3

Retraining

Dataset: MiniPlaces Challenge Dataset
Training Data Percentage = 80%
Validation Data Percentage = 10 %
Test Data Percentage = 10%

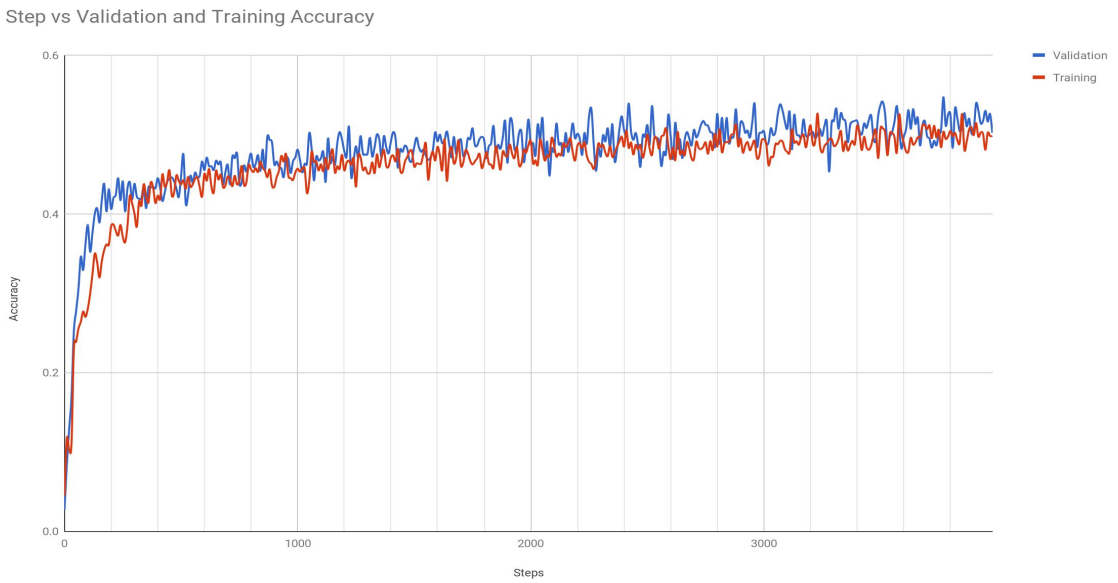
Training Parameters:
train_batch_size = 2000 images/step
validation_batch_size = 1000 images/step
learning_rate = 0.00001
How_many_training_steps = 4000 steps
(2.5 hrs approx. with NVIDIA Geforce GTX 970m)

Convolution
AvgPool
MaxPool
Concat
Dropout
Fully connected
Softmax

Transfer Learning with InceptionV3

Final Training Accuracy: 55.05%

Final Test/Validation Accuracy: 50.60%



DEMO