

Report for Project 2, MSBD 6000B

Data given:

Given 5 labels: 0(daisy), 1(dandelion), 2(roses), 3(sunflowers) and 4(tulips)

2569 labelled data points in train.txt

550 labelled data points in val.txt

551 un-labelled data points in test.txt

Goal:

Build a deep model to classify test images into 5 classes.

Tools:

Anaconda, keras, tensorflow for python 2.7

General strategy:

In keras, utilize Xception model, with weights pre-trained on ImageNet, which can accelerate the training process. The backend is tensorflow in this project.

Implementation:

Load training data, validation data and test data image path

Build an Xception-based model from training data and validation data for 30 epochs. The cross-validation split is 70% for training, 30% for validation. The final cross-validation accuracy is about 93%.

Predict the labels for test images by the trained model.

Output the prediction as txt file.

Reference:

<https://gogul09.github.io/software/flower-recognition-deep-learning>

<https://elitedatascience.com/keras-tutorial-deep-learning-in-python>