Assignment Two - Machine Learning: Details

Overview

Task description

Your task is to use machine learning to train a classifier capable of distinguishing different classes of flowers in an image, and to evaluate this classifier's performance. For this we will be using deep learning and a technique called Transfer Learning.

Conditions

Weighting	30%
Assessment Type	Project (applied)
Group / Individual	Group

Unit Learning outcomes measured

2. Analyse search, planning and machine learning problems and formalise them in the language/framework of relevant AI methods.

3. Build intelligent artefacts using AI software engineering skills.

4. Evaluate empirically different solutions and make fully justified recommendations.

5. Collaborate with others in a team environment to deliver an outcome for a client.

6. Communicate professionally in writing to produce a report for a client.

What you need to do

Further details, including required content for the assessment can be found in the instructions document below.

Resources available to complete the task

- **Detailed instructions** and background information: **CAB320-Assignment2-ML-Instructions.pdf (https://canvas.qut.edu.au/courses/16672/files/4089657?wrap=1)** ↓ **(https://canvas.qut.edu.au/courses/16672/files/4089657/download?download_frd=1)**

- **Dataset** of images provided (zip file to download and unzip: **small_flower_dataset.zip (https://canvas.qut.edu.au/courses/16672/files/4089683?wrap=1)** ↓ **(https://canvas.qut.edu.au/courses/16672/files/4089683/download?download_frd=1)**). The dataset is composed of 4 directories, one per class of flower (daisy, dandelion, roses, sunflowers, tulips). Each directory contains images featuring the corresponding class of flower.
- **Python script template** (file to download: **TransferLearning.py (https://canvas.qut.edu.au/courses/16672/files/4089655?wrap=1)** ↓ **(https://canvas.qut.edu.au/courses/16672/files/4089655/download?download_frd=1)**)

What you need to submit

Submission requirements

Submit **two files** only:

1. The **report in pdf format**, **strictly limited to 8 pages** (anything beyond 8 pages will be ignored by the marker). This does not include the cover page if you have one.
2. **One single Python script** to reproduce your experiments, in TransferLearning.py

   The script should implement the functions named in the instructions document. The marker needs to be able to reproduce your work by simply uncommenting function calls in the main block of your script.