Task 1B – Resources

Fruit Classification with a CNN

This document covers resources for Task 1B.

How to use these Resources ?

Let's cover the Do's and Don'ts (but mostly Don'ts). First things first, don't be overwhelmed by the quantity of resources. Don't try to read all of them and then do the task in one go (unless it works very well for you). For all other cases, ***Only chew how much you can eat!*** Understand one thing, implement it, test it rigorously and move on. You'll discover that you don't need all the resources to complete the task. May be you know some of the stuff before hand, may be some resources were provided for the sake of exhaustiveness. You may feel you don't see the complete picture since you are only looking at one part of it. For this just learn overall concepts or theory in brief. That way you may not feel left out. And then target one part of it very well.

Don't over complicate things unnecessarily. We already took care of it for you. Don't deep dive into math unnecessarily. You may not require it. We have tailored the tasks in such a way that by the end of it you will definitely know enough math behind basics of machine learning and neural networks in particular. So, if you are able to do tasks by yourself, you know enough of it already.

We hope we have bolstered you enough. So lets do the easy part now.

Resources:

Convolutional Neural Networks

1. Stanford's **CS231n** course **(recommended)** (link)
2. Convolutional Neural networks overview **(recommended)** (link)

Implementation Resources

Data loading and pre-processing

1. PyTorch tutorial on Data Loading. Covers normalization, image transformation like resizing, centre-cropping, etc. This should be more than enough for transforming images. (link1) (link2) (link3)

Architecture decisions and model implementation

1. Stanford's **CS231n** course **(recommended)** (link1) (link2)
2. Code examples (link1) (link2)
3. Docs for batch normalization, dropout and other **nn** stuff: (link)
4. Visualize CNN features (link)

That's it. Checkout what you are supposed do in the code. That's the next step if you are unsure what else we have provided. Also note that you are free to use resources other than the provided ones if you want to. But these are some which we suggest you to use.

…Best Wishes ! …