COMP3009/ COMP4139 Machine Learning

Lab 7 - CNN

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1. Introduction

From this lab onwards, we will be using Tensorflow official tutorials to support your learning of deep learning models. If you haven't done lab 6, it is highly recommended to go through lab 6 first to get familiar with Google Colab and simple neural network examples.

2. Tutorials

- **Image classification**. It also applied data augmentation and dropout techniques that we introduced in the lecture.
  https://colab.research.google.com/github/tensorflow/docs/blob/master/site/en/tutorials/images/classification.ipynb#scrollTo=4R26OU4gGKhh

- **Image Segmentation**. Check what loss function it used, and could you replace it by soft Dice coefficient loss function?
  https://www.tensorflow.org/tutorials/images/segmentation

- **Transfer Learning**.
  https://www.tensorflow.org/tutorials/video/transfer_learning_with_movinet

- **Variational Autoencoder**.
  https://www.tensorflow.org/tutorials/generative/cvae

- **DCGAN**. https://www.tensorflow.org/tutorials/generative/dcgan