DEEP LEARNING PROGRAMMING EXAM

Coronavirus disease (COVID-19) has infected more than 1.3 million individuals all over the world and caused more than 106,000 deaths. One major hurdle in controlling the spreading of this disease is the inefficiency and shortage of medical tests. There have been increasing efforts on developing deep learning methods to diagnose COVID-19 based on CT scans. However, these works are difficult to reproduce and adopt since the CT data used in their studies are not publicly available. Besides, these works require a large number of CTs to train accurate diagnosis models, which are difficult to obtain.

Fortunately, one open source dataset is created with the help of a senior radiologist in Tongji Hospital, Wuhan, China, who has performed diagnosis and treatment of a large number of COVID-19 patients during the outbreak of this disease between January and April. This open-sourced dataset contains 349 COVID-19 CT images from 216 patients and 397 non-COVID-19 CTs. The dataset is provided under train and test folder after.

Your task is to develop the expert model through Deep-Learning algorithm to effectively classify COVID and NON-COVID cases.

- Try to reduce the model's overfitting using appropriate techniques
- Explore the model performance for different learning factor and regularization on output layer
- Apply the callbacks to save the best model
- Apply the callback to stop the iteration early if the performance is not being improved for 'n' consecutive iteration. [choice of n is yours]