DataLab Preparation (Week 2, DataLab II, Wednesday)

**2. TensorFlow and Keras**

**2a Describe the arguments/parameters of the compile() method in Keras.**

The compile() method in Keras takes the following list of arguments: optimizer, loss and metrics.

- Loss function- the quantity that will be minimized during training. It represents a measure of success for the task at hand

- Optimizer - determines how the network will be updated based on the loss function. It implements a specific variant of stochastic gradient descent (SGD)

- Metrics - the measures of success one wants to monitor during training and validation, such as classification accuracy.

**2b How do we choose a loss function?**

We choose a right loss function by focusing on the objective that we want to achieve as the network will take any shortcut it can to minimize the loss. However, when it comes to common problems such as classification, regression and sequence prediction, there are general guidelines. For example, for two-class classification, we use binary crossentropy; for many-class classification, we use categorical crossentropy, etc.

**2c Describe the arguments/parameters of the fit() method in Keras.**

The fit() method in Keras takes the following arguments:

- The data (inputs and targets) to train on

- Number of epochs to train for (i.e., how many times the training loop should iterate over the data passed)

- The batch size to use within each epoch

**2d How do we use a model after training it in Keras?**

After training a model using Keras, it will be used to make predictions on new data (inference).