

Exercise: MNIST classification

(Python and) Reinforcement Learning

"The MNIST database (Modified National Institute of Standards and Technology database) is a large database of handwritten digits that is commonly used for training various image processing systems. The database is also widely used for training and testing in the field of machine learning. [...] The MNIST database contains 60,000 training images and 10,000 testing images."



(Source text and image: https://en.wikipedia.org/wiki/MNIST_database)

In this exercise you will use the tensorflow-based python library *keras* to design and train a deep neural network to classify the images of the MNIST database. All images are greyscale images with a size of 28x28 pixels.

Further instructions for this task are given in `MNIST_Classification_Template.py`.

After completing the task, you can try different architectures for the neural net. E.g., increase/decrease the number of hidden neurons or epochs or add some hidden layers. Some possible architectures including their error rate can be found in the Wikipedia entry mentioned above.