# Deep Learning and Temporal Data Processing

Neural Networks in TensorFlow

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# Agenda

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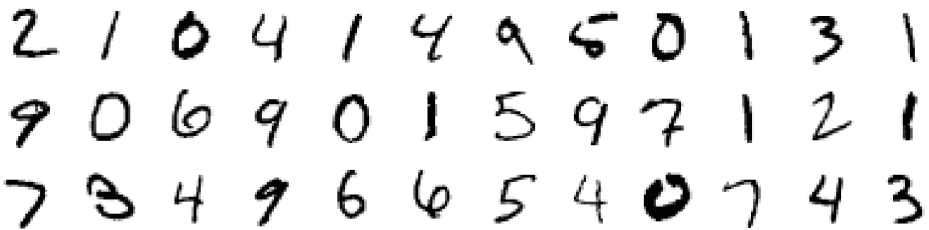
**MNIST**

**References**

# MNIST

# MNIST Dataset

**MNIST[1] is a database of handwritten digits** consisting of 60K training images and 10K testing images. All digits have been centered in 28x28 grayscale images.



# MNIST Dataset

Due to its simplicity (in 2017!) the MNIST dataset is often considered to be the "Hello World!" in the Machine Learning framework.

In `lab_utils.py` I already implemented a function `get_mnist_data` that handles the download and loading of the dataset.

```
# Load MNIST data
mnist = get_mnist_data('/tmp/mnist', verbose=True)
```

# Goal

The **goal** of this practice is to **implement a fully-connected neural network to perform 10-class classification** on the MNIST dataset.

# Outline

Some advices:

1. Take your time to explore the dataset
2. Start small and make the whole training pipeline working
3. First implement a single hidden layer neural network
4. Implement a bigger network: how does this affects performance?

# References

[1] Y. LeCun.
**The mnist database of handwritten digits.**
*http://yann. lecun. com/exdb/mnist/*, 1998.