Homework 6: Deep Learning

Due June 24th, beginning of exercise session
Kristian Kersting, Alejandro Molina
{kersting, molina}@cs.tu-darmstadt.de

upload link: `https://www.dropbox.com/request/0EyNaA11EGyiexfyadSa`

Autoencoders

We have discussed during the last lecture that Autoencoders (AEs) can used to obtain embeddings.

The goal of this homework is to implement AEs using deep learning frameworks such as TensorFlow, PyTorch and MXNet.

We use MNIST again for this homework, that is, inputs are gray-scale (single channel) images.

1) Implement an Autoencoder, you decide the number and size of your layers.

2) Generate new images of numbers, by feeding new codes into your decoder.

References

[1] Y. LeCun, L. Bottou, Y. Bengio, and P. Haffner. Gradient-based learning applied to document recognition. *Proceedings of the IEEE*, 86(11):2278–2324, 1998.