Helpful Links & Resources

Marco Willi

Links and ressources to different topics related to Machine Learning, Deep Learning, and Images.

Theory

PyTorch

PyTorch internals - Blog Post

Deep Learning and Computer Vision

University of Michigan - Deep Learning for Computer Vision

- Sehr gute Vorlesung zum Thema

University of California, Berkeley - Modern Computer Vision and Deep Learning

- Sehr gute Vorlesung zum Thema

Neuronale Netzwerke - Basics

Perceptron Learning Rule S. Raschka

CS229 Stanford MLP Backpropagation

Notes on Backpropagation

3Blue1Brown Gradient Descent

3Blue1Brown Backpropagation Calculus

Andrew Ng Backprop

Andrej Karpathy - Backpropagation from the ground up

Model Selection

Paper von S.Raschka: "Model Evaluation, Model Selection, and Algorithm Selection in Machine Learning"

Practical

Andrej Karpathy - A Recipe for Training Neural Networks

ML Best Practices Videos

Martin Zinkevich - Best Practices for ML Engineering

Andrew Ng - Advice For Applying Machine Learning | Deciding What To Try Next

Andrew Ng - Advice For Applying Machine Learning | Learning Curves

Andrew Ng - Advice For Applying Machine Learning | Deciding What To Do Next (Revisited)

Andrew Ng - Machine Learning System Design | Prioritizing What To Work On

Andrew Ng - Machine Learning System Design | Error Analysis

Andrew Ng - Machine Learning System Design | Data For Machine Learning

Tools

Data Science Repository

Build a Reproducible and Maintainable Data Science Project

- great jupyter book to learen about how to structure a repository and more

Lightning-Hydra-Template

- template to strcuture a repository based on experiment configuration with Hydra and Pytorch-Lightning

Data Handling

datasets

- Great package to create and manage (large) image datasets

img2dataset

- Package to download large image datasets from urls

DVC

- Package for data version control

PyTorch

Lightning

- boilerplate code to easily train models and use gpu, etc.