dl_book

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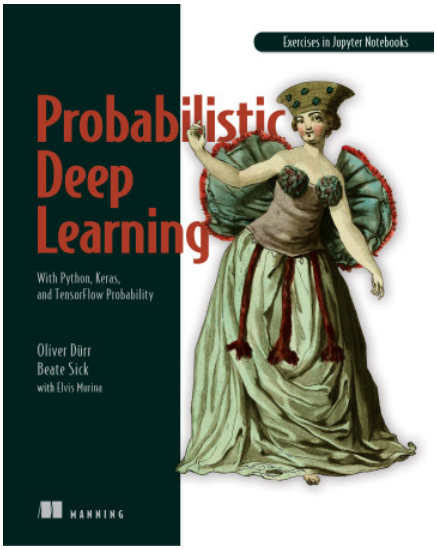

Notebooks overview

You can use the notebooks below by clicking on the Colab Notebooks link or running them locally on your machine.

To run them locally, you can either

- install the required software (Python with TensorFlow) or
- use the provided Docker container as described in https://github.com/oduerr/dl_book_docker/blob/master/README.md

Chapter 2: Neural network architectures

Number	Topic	Github	Colab
1	Banknote classification with fcNN	nb_ch02_01	nb_ch02_01
2	MNIST digit classification with shuffling	nb_ch02_02	nb_ch02_02
2a	MNIST digit classification with fcNN	nb_ch02_02a	nb_ch02_02a
3	CNN edge lover	nb_ch02_03	nb_ch02_03

Number	Topic	Github	Colab
4	Causal and time dilated convolutions	nb_ch02_04	nb_ch02_04

Chapter 3: Principles of curve fitting

Number	Topic	Github	Colab
1	Gradient descent method for linear regression with one tunable parameter	nb_ch03_01	nb_ch03_01
2	Gradient descent method for linear regression	nb_ch03_02	nb_ch03_02
3	Linear regression with TensorFlow	nb_ch03_03 nb_ch03_03_tf2	nb_ch03_03 nb_ch03_03_tf2
4	Backpropagation by hand	nb_ch03_04 nb_ch03_04_tf2	nb_ch03_04 nb_ch03_04_tf2
5	Linear regression with Keras	nb_ch03_05	nb_ch03_05
6	Linear regression with TF Eager	nb_ch03_06	nb_ch03_06
7	Linear regression with Autograd	nb_ch03_07	nb_ch03_07

Chapter 4: Building loss functions with the likelihood approach

Number	Topic	Github	Colab
1	First example of the maximum likelihood principle: throwing a die	nb_ch04_01	nb_ch04_01
2	Calculation of the loss function for classification	nb_ch04_02	nb_ch04_02
3	Calculation of the loss function for regression	nb_ch04_03	nb_ch04_03
4	Regression fit for non-linear relationships with non-constant variance	nb_ch04_04	nb_ch04_04

Chapter 5: Probabilistic deep learning models with TensorFlow Probability

Number	Topic	Github	Colab
1	Modelling continuous data with Tensoflow Probability	nb_ch05_01	nb_ch05_01
2	Modelling count data with Tensoflow Probability	nb_ch05_02	nb_ch05_02

Chapter 6: Probabilistic deep learning models in the wild

Number	Topic	Github	Colab
1	Discretized Logistic Mixture distribution	nb_ch06_01	nb_ch06_01
2	Regressions on the deer data	nb_ch06_02	nb_ch06_02
3	Getting started with flows	nb_ch06_03	nb_ch06_03
4	Using RealNVP	nb_ch06_04	nb_ch06_04
5	Fun with glow	nb_ch06_05	nb_ch06_05

Chapter 7: Bayesian learning

Number	Topic	Github	Colab
1	Predict images with a pretrained Imagenet network	nb_ch07_01	nb_ch07_01
2	Bayes Linear Regression Brute Force vs Analytical	nb_ch07_02	nb_ch07_02
3	Bayesian model for a coin toss	nb_ch07_03	nb_ch07_03
4	Play with the analytical Bayes solution for linear regression	nb_ch07_04	nb_ch07_04

Chapter 8: Bayesian neural networks

Number	Topic	Github	Colab
1	Linear Regression the Bayesian way	nb_ch08_01	nb_ch08_01
2	Dropout to fight overfitting	nb_ch08_02	nb_ch08_02
3	Regression case study with Bayesian Neural Networks	nb_ch08_03	nb_ch08_03
4	Classification case study with novel class	nb_ch08_04	nb_ch08_04

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