

Volkswirtschaftliches Seminar (MW86/MQV10)

Summer Term 2024

Prof. Dr. Jannis Kück

Data Science in Economics: Introduction to Deep Learning

Content: With deep learning methods, particularly large amounts of data can be analysed to find patterns and trends. Deep learning refers to a class of algorithms that are based on artificial neural networks and are optimised for working with both structured and unstructured data such as images, speech, videos and text. Topics such as feedforward neural networks, convolutional neural networks, recurrent neural networks or generative deep learning models can be discussed in the term paper. The term paper serves as an introduction to the methods of deep learning. The seminar is based on the books "Deep Learning with R" and "Deep Learning with Python". The term paper contains a theoretical and a programming part. Students can choose to work with either R or Python.

Target group: M.Sc. VWL / M.Sc. BWL / M.Sc. Economics

Prerequisite: Basic knowledge in statistics

Maximum number of students: 10

Examination: Term paper 10-12 pages, presentation and discussion

Language: English, German

Main literature:

Allaire, J.J., Chollet, F. & Kalinowski T. (2022). Deep Learning with R. Manning.
Chollet, F. (2021). Deep Learning with Python. Manning.

Further literature:

Allen, D. (2015). Think Python: How to Think Like a Computer Scientist, O'Reilly Media.

Zhang, A., Lipton, Z. C., Li, M., & Smola, A. J. (2023). Dive into deep learning. Cambridge University Press.