Block lecture from industry: SS 2019, Room 12-270

Fr. 03.05.2019  10:00 to 16:00 (block course introduction to data science)
Fr. 17.05.2019  10:00 to 16:00 (block course, python & visual analytics)
Fr. 07.06.2019  10:00 to 16:00 (block course, data science modeling)
Fr. 28.06.2019  10:00 to 16:00 (block course) deadline programming exercise 1
Fr 16.08.2019  10:00 to 16:00 (block course) deadline programming exercise 2

The students have to perform two programming exercises. The submission of the exercises is mandatory to do the final written exam

Written Exam: Fr 30.08  11:00 to 12:00

Lecture: Introduction to Data Science

The lecture addresses students that are interested in the topic of analytics, programming skills, and business models. In the lecture we discuss all three issues, while students will do exercises concerning data processing and predictive modeling in python.

The digital transformation describes the change in businesses where modern information technology is penetrating all industrial processes. Each sensor, device, machine, and systems are connected to gather information to improve business processes and to increase customer services. The age of data gathering started already 20 years ago and is often coined under the term big data. Today, big data is any data that is expensive to manage and hard to extract value from. Predictive Analytics is the art to extract value out of big data with the task to leveraging industrial revenues.

In this lecture, we focus on data processing and predictive modeling (machine learning) via python and how to solve the related business problem. Programming skills are mandatory for a data scientist; thus, programming exercises have to be done by the students. Predictive models forecast the future given past or existing data sets. For this machine learning becomes mandatory. In this lecture, we will use the so-called scikit-learn Python library to demonstrate pitfalls and best practices to solve a problem. Note that full coverage of these topics is not possible. Thus, we sketch only basic concepts by using the Python programming language to give a quick start and an overview of this topic.

One of the main pitfalls of data analysis is attempting to solve the wrong problem. Thus, the lecture focuses heavily on the business side and how to address the correct data questions. Persons responsible for solving data science problem in the industry needs to solve a business problem. The job profile is often denoted as data scientists. ‘Data Scientist: The Sexiest Job of the 21st Century – HBR article @ https://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century/
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Language: English