

Module 14 “Data Science and Machine Learning for Managers”

Supervisor	Prof. Dr. Christoph Ihl
Inputs	
Learning path	Workload: 6 ECTS / 180 hours 48 hours attendance (6 dates) in 15 weeks
Recommended semester	Freely selectable
Exam / grading	Project presentation graded

Contents

- Basic Workflows in Data Science
- Programming Basics: Functions, Loops, Apply Data Access, Scraping and Import
- Data Transformation with dplyr and data.table
- Dealing with Text Data
- Exploratory Data Analysis
- Data Visualization with ggplot2
- Data Modeling Overview
- Unsupervised Machine Learning
- Supervised Machine Learning
- Deep Learning
- Data Communication: R Markdown, Shiny Dashboards

Learning objectives

After completing this module, students will be able to:

- Obtain large amounts of data via APIs or web scraping from the Internet
- Clean and transform data
- Explore and visualize data in a goal-oriented way
- Model data using modern machine learning techniques with respect to classifications and predictive predictions
- Communicate data and results in the form of products and applications