

Course Introduction

(IHK172 Introduction to Data Analytics)

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Outline



- About this course
- Topics to be discussed in this course
- Methodologies
- Examination
- Quick discussion

Course Description

The course focuses on the understanding of theoretical and practical aspects in data analytics.

The course will

- present different phases of data handling such as data discovery, data aggregation, planning of the data models, data model execution, validation, and visualization and presentation.
- introduce some concepts of predictive analysis and machine learning
- provide hands-on tasks where students will use tools for conducting the analysis and to generate visualizations.

Upon Completion of the Course

Students should be able to:

- understand fundamental concepts and methods within data analytics field
- explain application areas of data analytics from an organizational perspective
- use tools for processing and visualizing large amount of data coming from different sources and with different formats
- develop analytical solutions for basic data analysis and pattern identification to enable informed decision-making

Methodology

- Active participation
- Type of activities:
 - Lectures (Pre-recorded)
 - Live Coding
 - Laboratory Work
 - Tutoring
 - Assignments and
 - Final Exam

Lectures

- The course comprises 6 lectures that follow chapters of the main course book.
 1. Introductory Background (1)
 2. Descriptive Statistics & Descriptive Multivariate Analysis (2, 3)
 3. Data Quality and Preprocessing (4)
 4. Clustering & Frequent Pattern Mining (5, 6)
 5. Regression (7)
 6. Classification (8)
- Lectures are prerecorded and will be progressively uploaded in MyMoodle and we expect you to watch them before coming to live coding sessions.

Numbers in brackets indicate chapters in the book



Examination

No.	Activity	Grade
1.	<i>Laboratory work (Descriptive analysis)</i>	<i>U, G</i>
2.	<i>Project (Clustering & Predictive analysis) *</i>	<i>U, G</i>
3.	<i>Final exam</i>	<i>U, G, VG</i>
<i>Final grade</i>		<i>U, G, VG</i>

* Project will be solved in groups

Laboratory Work

- Laboratory is an individual work and will cover the descriptive analysis of a chosen dataset

Lab presentations

- A registration form for lab presentation will be uploaded in Moodle where you should book a time slot which is suitable for you to present your laboratory work.

Project

- Project will be solved in groups (max two students) and will focus on clustering or predicting the unknown, i.e. regression or classification

Project presentation

- A registration form for project presentation will be uploaded in Moodle where you should book a time slot which is suitable for you to present your project.

Live Coding

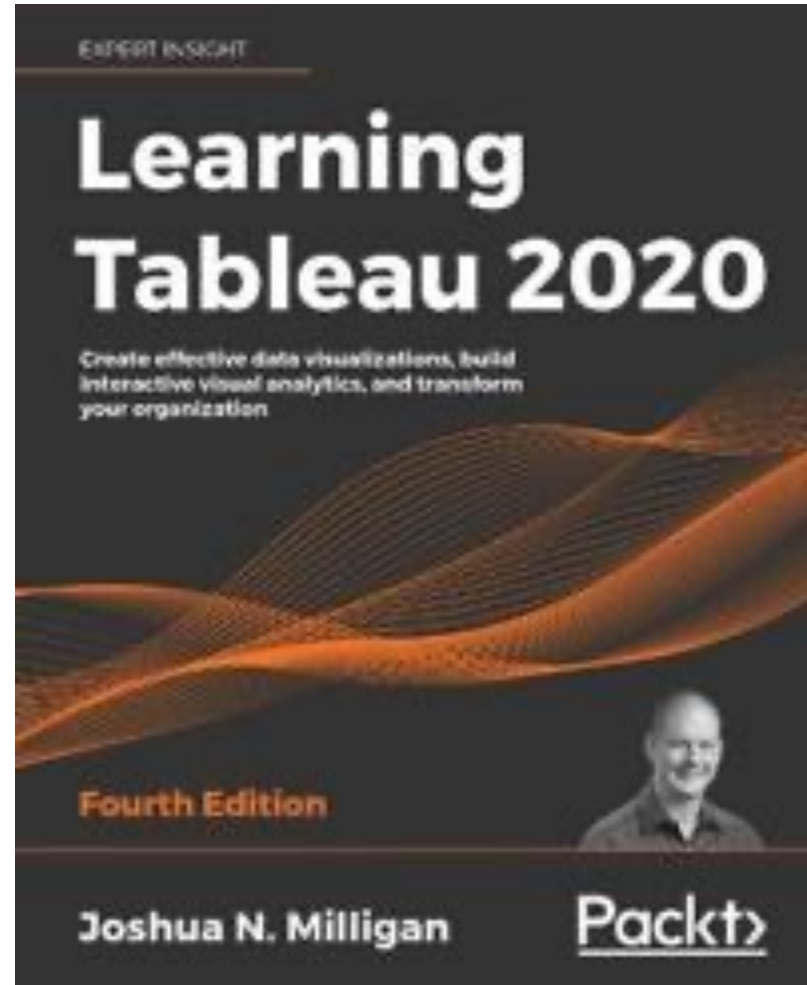
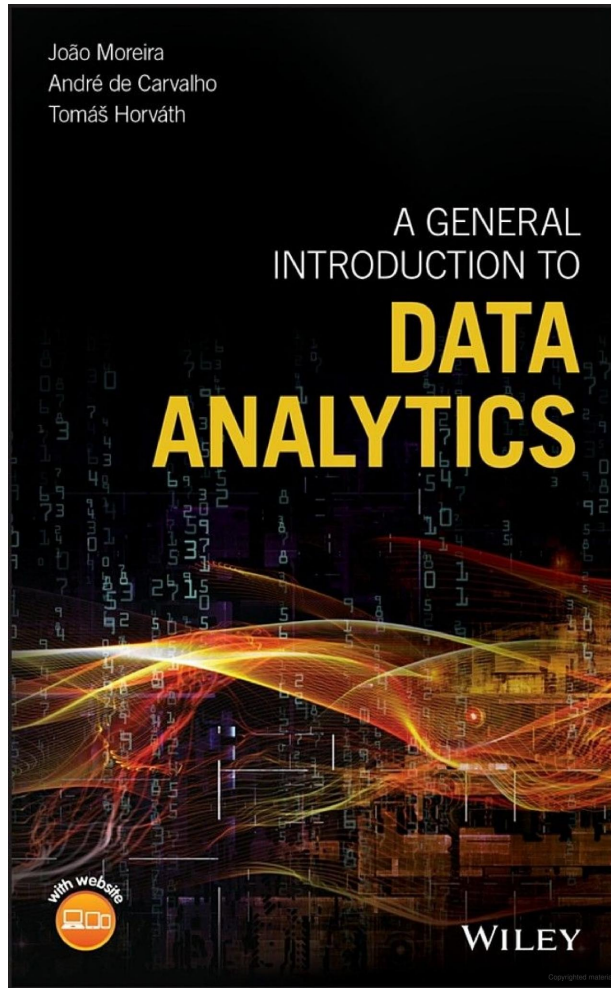
- We will provide 2 sessions where we present hands-on tasks in order to help you to better grasp the content in the lecture.
 - The first session will be focusing on descriptive analysis
 - The second session focusses on clustering and predictive analysis

Written exam (Tentamen)

- The course will end with a written exam (tentamen).
- The aim is to show that you have understood concepts and aspects of data analytics
- Focus on the theoretical part of the lectures and consider the literature.



Relevant Literature

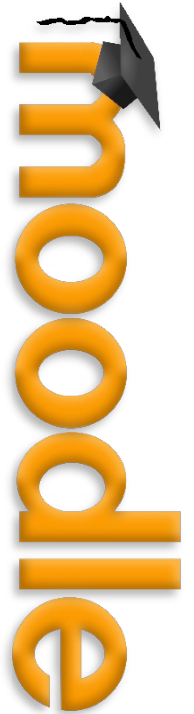


About the teachers

- Zenun Kastrati – Course responsible & Live coding, Labs
- Fisnik Dalipi – Examiner & Live Coding
- Manon Ykema – Labs & Tutoring

Course web site

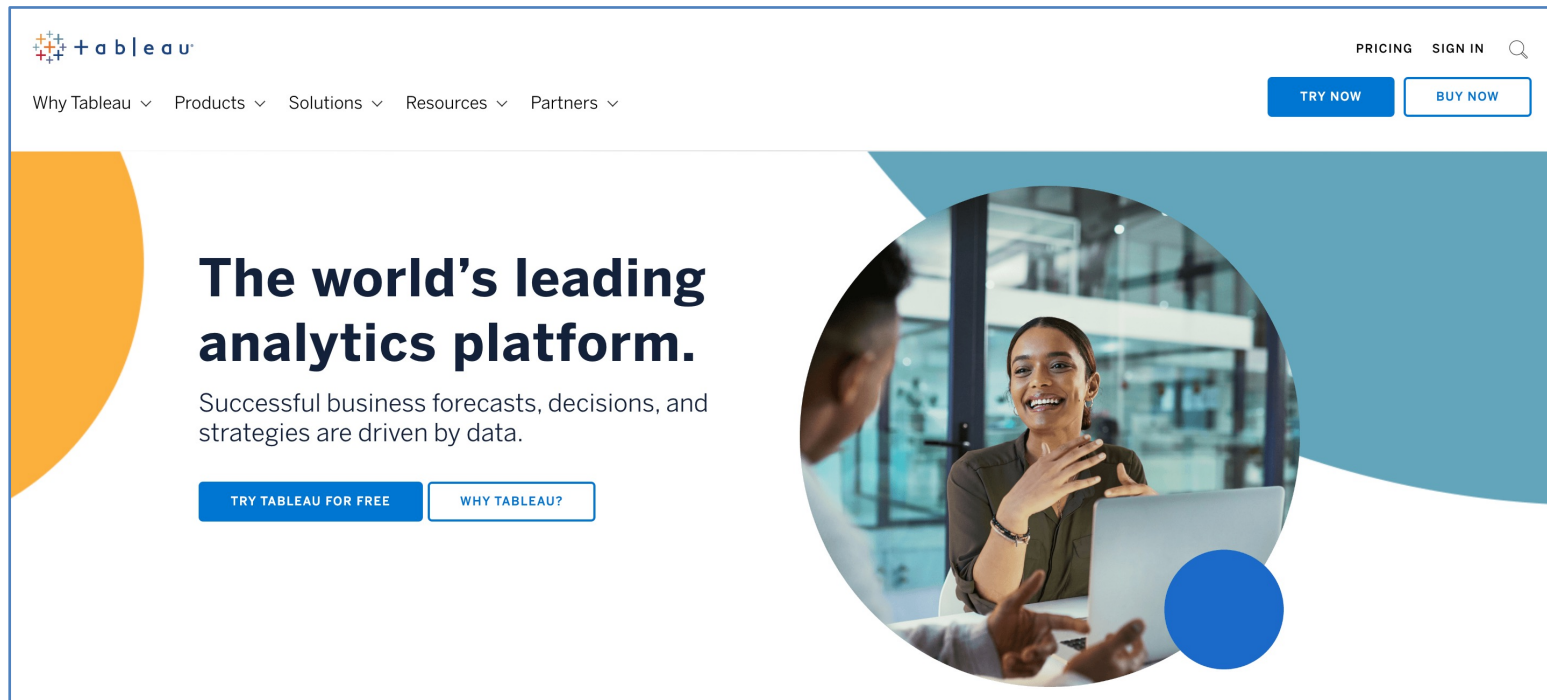
- My Moodle
 - <https://mymoodle.lnu.se>
 - Main channel for offline communication
 - Storage for lectures, labs, assignments, etc.
- Consultation
 - Upon appointment via email, or through Moodle forums



Installing Tableau

Following are step by step instructions for installing Tableau

1. Go to <https://www.tableau.com>
2. Choose option *Try Tableau for Free*



Installing Tableau (I)

Student License

To be able to use 'Tableau' throughout the year, you must apply for a student license. Here comes the required steps:

1. Choose *Get Tableau for Free*
2. Then fill out the form to apply for a student license.

Note: You must use your LNU student email address only to apply for a student license.



Weka

Weka is an open source tool that can be downloaded from the following link <https://www.cs.waikato.ac.nz/ml/weka/>

[Project](#) [Software](#) [Book](#) [Courses](#) [Publications](#) [People](#) [Related](#)

Weka 3: Machine Learning Software in Java

Weka is a collection of machine learning algorithms for data mining tasks. It contains tools for data preparation, classification, regression, clustering, association rules mining, and visualization.

Found only on the islands of New Zealand, the Weka is a flightless bird with an inquisitive nature. The name is pronounced like [this](#), and the bird sounds like [this](#).

Weka is open source software issued under the **GNU General Public License**.

We have put together several **free online courses** that teach machine learning and data mining using Weka. The videos for the courses are available **on Youtube**.

Weka supports **deep learning**!

Go to
Download

Getting started

- Requirements
- **Download**
- Documentation
- FAQ
- Getting Help

Further information

- Citing Weka
- Datasets
- Related Projects
- Miscellaneous Code
- Other Literature

Developers

- Development
- History
- Subversion
- Contributors
- Commercial licenses



Questions?

Thank You!

