

Lecture 1: "*The Machine Learning Landscape*"

Learning Outcome

- You know the basic terminology in Machine Learning
- You can talk about issues in the Machine Learning domain
- You have a good overview about the Machine Learning algorithms

Book Chapter

Please read the *Chapter 1 "The Machine Learning Landscape"* and answer the following Questions.

Keep in mind: If you answer these questions and write a detailed summary, you won't need to read these chapters again while preparing for the exam

Questions

1. Where do you face Machine Learning today?
2. What is Machine Learning?
3. What is the 'training set'?
4. What is the 'training data'?
5. How do we measure performance?
6. Why is it beneficial to use ML?
7. What does 'data mining' mean?
8. What types of Machine Learning systems can you classify?
9. Describe the four major categories shortly and point out the most important algorithms (supervised learning, unsupervised learning, semisupervised learning, Reinforcement Learning)
10. What is Batch and Online Learning?
11. What is Instance-Based and Model-Based Learning?
12. What are common problems with Machine Learning algorithms and datasets?
13. How can we do Testing and Validating?
14. What does the No Free Lunch theorem state?
15. Also do the exercises at the end of the chapter.

Homework Assignment

Draw a MindMap (using Pen&Paper, Powerpoint or <https://coggle.it>) with the term "Machine Learning" in the middle.

Try to include the terms:

- Classification
- Unsuperivsed Learning
- DBSCAN
- Mini-Batches
- Test-set