

Machine Learning Course description

Syllabus

- Introduction to Machine Learning
- Data preparation
- Exploratory data analysis
- Supervised learning: classification
- Supervised learning: regression
- Unsupervised learning: clustering
- Unsupervised learning: associative rules
- Applications and use cases in Python

Pre-requisites and Assessment

Pre-requisites

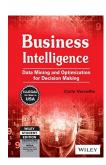
- Machine Learning is a discipline at the interface between mathematics and computer science
- A good background in probability, linear algebra and calculus is required, as well as a programming experience

Assessment

- The final mark is determined by:
 - A final written exam at each session, open and closed answers (multiple choice with penalty)
 - theoretical questions aimed at assessing knowledge acquisition with respect to tasks, methods and algorithms
 - applied questions aimed at assessing the ability to apply methods and algorithms, to properly understand the outputs and derive the implications for the application domain, to show programming skills in Python
 - Individual contribution to lab activities (discussions and assignments)
- Only students officially registered for a given session will be allowed to take the assessment in that session
- Late registrations will be rejected

References and web sites





References

- C. Vercellis. Business intelligence: data mining and optimization for decision making. Wiley 2009.
- T. Hastie, R. Tibshirani, and J. Friedman. The Elements of Statistical Learning. Springer 2011.
- E. Alpaydin. Introduction to Machine Learning. MIT press 2014.
- A. Geron. Hands-On Machine Learning With Scikit-Learn and Tensorflow: Concepts, Tools, and Techniques to Build Intelligent Systems.
 O'Reilly 2017
- Further readings will be suggested during classes and labs

Web sites

- Course web site on the WeBeep system for additional readings, use cases, datasets, communications
- Web site of the door research group for links, news, research themes, textbook erratacorrige: www.door.polimi.it