

Machine learning for finance

Romuald Elie – Univ. Marne la Vallée - CREST

Course : 18 hours - TP : 0 hours

Objectives

The objective of the course is to become familiar with the main methods of datamining and machine learning for applications in finance. Advanced scoring techniques, classical machine learning and deep learning algorithms, as well as reinforcement methods will be discussed. The use of unstructured data such as textual data will be discussed. This course is an introduction to online learning.

Outline

- Presentation of the main machine learning algorithms.
- Overlearning: penalization, regularization, cross-validation.
- Presentation of the main scoring techniques
- Focus on Neurone networks: feedforward, convolutional, recurrent,
- Text data processing: bag of words, Word2Vec, stock price prediction from tweets
- Reinforced learning: model based, policy based

Bibliography

- Deep learning, I. Goodfellow, Y. Bengio & A. Courville
- Advances in financial machine learning, M. Lopez de Prado
- Reinforcement Learning, An Introduction, R. Sutton & A. Barto