

046195 – Introduction To Machine Learning

Prerequisites:(signals and systems 044130
and Introduction to Probability h 104034)

Identical Courses: Neural Networks for Control/Diagnostic 036049
Introduction to Machine Learning 236756

An introductory course on learning systems in the context of:

- Signal processing
- Artificial intelligence and control
- Problems of classification
- Regression and clustering
- Neural networks: multi-level perceptrons and radial basis functions
- Decision trees
- Elements of the learning theory: the Bayesian approach, hypothesis spaces
- Dimensionality reduction using principal components
- Classification using support vector machines
- Reinforcement learning

Recommended Reading:

- T.M. Mitchell, Machine Learning, McGraw-Hill, 1997.
- E. Alpaydin, Introduction to Machine Learning, MIT Press, 2004.
- Duda, Hart and Stork, Pattern Classification, 2nd Ed., Wiley, 2001. [recommended]
- C. Bishop, Pattern Recognition and Machine Learning, Springer , 2007.
[recommended]
- Hastie, Tibshirani and Friedman, The Elements of Statistical Learning, Springer, 2001.