Machine learning is an interdisciplinary field in the intersection of mathematical statistics and computer sciences. Machine learning studies statistical models and algorithms for deriving predictors, or meaningful patterns from empirical data. Machine learning techniques are applied in search engine, speech recognition and natural language processing, image detection, robotics etc. In our course we address the following questions: What is the mathematical model of learning? How to quantify the difficulty/hardness/complexity of a learning problem? How to choose a learning model and learning algorithm? How to measure success of machine learning?

The syllabus of our course:
1. Supervised learning, unsupervised learning
2. Generalization ability of machine learning
3. Support vector machine, Kernel machine
4. Neural networks and deep learning
5. Bayesian machine learning and Bayesian networks.

Recommended Literature.

During the course we shall discuss topics for term paper assignment which could be qualified as the exam.

The first meeting shall take place at 10:40 AM Thursday October 2019, in the seminar room K358 MUUK. Anybody interested in the lecture course please contact me per email hvle@math.cas.cz for arranging more suitable lecture time.

Date: September 18, 2019.

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