Learning and Intelligent Systems

Course Overview

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las.ethz.ch/courses/lis-s17

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Overview

▶ Introductory ML course
  ▶ solid knowledge of math: linear algebra, calculus, probability
  ▶ basic programming skills (Java, Python, Matlab, ...)

▶ Preparation for M.Sc. level ML courses
  ▶ computer science, data science (new!)

▶ Main topics
  1. supervised learning
  2. unsupervised learning
  3. machine learning for/in intelligent systems

▶ Algorithms, models & applications
Relation to other ML Courses @D-INFK

- Advanced Machine Learning (Fall)
  - continuation and advanced topics
- Probabilistic Foundations of AI (Fall)
  - reasoning and decision making under uncertainty
- Data Mining (Fall)
  - how to scale machine learning to massive data sets
- Deep Learning (Fall)
  - advanced topics in deep learning
- Computational Intelligence Lab (Spring)
  - matrix factorization, recommender systems
- Statistical Learning Theory (Spring)
  - theoretical foundations; model validation
Course Material

▶ Course homepage: las.ethz.ch/courses/lis-s17
  ▶ login with NETHZ account

▶ Lecturer(s):
  ▶ class developed by Prof. Andreas Krause (on sabbatical)
  ▶ lectures given by Profs. Gunnar Rätsch and Thomas Hofmann
  ▶ exercise sessions and projects lead by Kfir Levy and TA team

▶ Material
  ▶ textbooks listed on course webpage
  ▶ T. Hofmann: ”blackboard shots” and \LaTeX-notes posted
  ▶ G. Rätsch: TBD
  ▶ pptx slides from A. Krause and 2016 recordings available
Course Project

- Course project: apply basic learning methods to make predictions on real data
- Submit predictions on test data
- To do now/soonish:
  - team up in groups of (up to) 3
  - will send instructions on how to register by end of week
  - more details to follow in the tutorials
Teaching Team

Instructors

► Gunnar Rätsch (raetsch@inf.ethz.ch)
► Thomas Hofmann (thomas.hofmann@inf.ethz.ch)

Teaching assistants

► Kfir Levy – Head TA (yehuda.levy@inf.ethz.ch)
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Exercises

▶ Take them seriously if you want to pass the exam...

▶ Four sessions

1. Mon 15-17, HG D 5.2
2. Tue 10-12, ML E 12
3. Tue 15-17, HG D 5.2
4. Fri 13-15, HG D 5.2

▶ Starting this week