EE-566

Adaptation and learning

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Cursus	Sem.	Type
Electrical Engineering		Opt.
Electrical and Electronical Engineering	MA2, MA4	Opt.
Robotics, Control and Intelligent Systems		Opt.

Language of teaching	English
Credits	4
Session	Summer
Semester	Spring
Exam	Written
Workload	120h
Weeks	14
Hours	**4 weekly**
Lecture	2 weekly
Exercises	2 weekly
Number of positions	

Summary

In this course, students learn to design and master algorithms and core concepts related to inference and learning from data and the foundations of adaptation and learning theories with applications.

Content

The course covers the fundamentals of inference and learning from streaming and batch data. Students also learn about the foundations of online and batch machine learning techniques in a unified treatment. In particular, the course covers topics related to optimal inference, regularization, proximal techniques, stochastic learning, generalization theory, Bayes and naive classifiers, nearest-neighbor rules, clustering, decision trees, logistic regression, discriminant analysis, Perceptron, support vector machines, kernel methods, bagging, boosting, random forests, cross-validation, principal component analysis, and neural networks.

Learning Prerequisites

Recommended courses

Prior exposure to probability theory and linear algebra is recommended.

Resources

Moodle Link

- https://go.epfl.ch/EE-566