CS-726 **Machine Learning for Database Systems**

Ailamaki Anastasia, Koch Christoph

Cursus	Sem.	Type
Computer and Communication Sciences		Obl.

Language of teaching	English
Credits	2
Session	
Exam	Oral presentation
Workload	60h
Hours	**28**
Courses	14
TP	14
Number of positions	

Frequency

Every year

Remark

Next time: Fall 2019

Summary

This course covers the emerging interdisciplinary field targeting the intersection of Machine Learning and Database Systems. The students will read, review and present papers from recent venues across Database Systems and Machine Learning fields.

Content

This course will cover the emerging interdisciplinary field targeting the intersection of Database Systems and Machine Learning. Machine Learning has become a key component for numerous data management systems used to improve database systems performance and/or functionality. Similarly, many data management challenges and solutions have appeared in numerous machine learning systems/algorithms enabling fast and efficient data processing. This course targets the emerging research field arising at the intersection of Database Systems and Machine Learning. The course aims to investigate whether and how each field can help each other to improve the state-of-the-art. The course will cover papers that contribute improving database systems by using machine learning, and papers that contribute building large-scale machine learning systems by using data management techniques. The papers will be from top Database Systems conferences such as SIGMOD, VLDB and ICDE as well as top Machine Learning conferences such as NIPS, ICML, KDD, AAAI and IJCAI, and provide an overview of the state-of-the-art in this emerging field.

Keywords

Database Systems, Machine Learning

Learning Prerequisites

Recommended courses

- Undergraduate and/or graduate-level Database Systems
- Machine Learning
- Applied Data Analysis

Learning Outcomes

By the end of the course, the student must be able to:

- Demonstrate their understanding in the emerging area of Machine Learning for Database Systems
- Derive potential research lines that can flourish the emerging field which will include understanding data management challenges that machine learning can solve, as well as understanding challenges in machine learning