CS-723

Topics in Machine Learning Systems

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Cursus	Sem.	Type
Computer and Communication Sciences		Opt.

Language of teaching	English
Credits	3
Session	
Exam	Oral presentation
Workload	90h
Hours	**56**
Courses	28
TP	28
Number of positions	

Frequency

Every year

Remark

TBD

Summary

This course will cover the latest technologies, platforms and research contributions in the area of machine learning systems. The students will read, review and present papers from recent venues across the systems for ML spectrum.

Content

The course will cover recent papers from the literature in the emerging area of ML systems. With abundance of data and the emergence of
data science, machine learning is widely applicable in a variety of usage scenrios with high performance, accuracy and cost being key
design goals. The latter not only has implications for algorithms but also platforms from software to hardware to enable collective
optimization of the design metrics. The topic is inherently multidisciplinary and will cover papers from a variety of conferences in computer
science subfields; e.g., ICML, NIPS, ICLR, KDD, VLDB, SIGMOD, SOSP, OSDI, SysML, ASPLOS and ISCA).

Students will understand the state-of-the-art in the emerging area of ML Systems. Specifically the cover core technologies in production ML
systems including: (1) languages and paradigms for specification of large-scaling machine learning applications, (2) the convergence of
analytics from relational databases to unstructured data, (3) resource management in large-scaling ML systems, (4) network stacks for ML
systems, and (5) emerging ML systems accelerator architecture.
In this course students learn to read, understand, critique and present research papers.

Keywords

Machine Learning; Systems

Learning Prerequisites

Required courses

Graduate level course in architecture, databases, systems

Recommended courses

Graduate level course in architecture, databases, systems