MATH-602

Inference on graphs

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Cursus	Sem.	Type
Mathematics		Opt.

Language of teaching	English
Credits	3
Session	
Exam	Oral
Workload	90h
Hours	**60**
Lecture	20
Practical work	40
Number of positions	

Frequency

Every year

Remark

Fall semester

Summary

The class covers topics related to statistical inference and algorithms on graphs: basic random graphs concepts, thresholds, subgraph containment (planted clique), connectivity, broadcasting on trees, stochastic block models and perceptron models. Requirement: basics of probability and statistics.

Content

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The class will have lectures and projects consisting of papers presentations, potential problem extensions and reports.

Keywords

Inference on graphs, learning on graphs, random graphs, community detecion, clustering, perceptron, neural networks, spectral graph theory.

Learning Prerequisites

Required courses

A basic class on probability and statistics

Learning Outcomes

- Understand the material of the class and related papers.

Resources

Bibliography

Notes on "Random graphs" and monograph on "Community detection and stochastic block models" by E. Abbe. List of papers.

Ressources en bibliothèque

- Community detection and stochastic block models / Abbé

Moodle Link

- https://go.epfl.ch/MATH-602