

ChE-650

Artificial intelligence in chemistry and beyond (fall)

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Cursus	Sem.	Type
Chemistry and Chemical Engineering		Obl.

Language of teaching	English
Credits	1
Session	
Exam	Term paper
Workload	30h
Hours	18
Courses	10
Project	8
Number of positions	100

Frequency

Only this year

Remark

Next time Fall 2022

Summary

Should have expertise in chemistry, physics or life and material sciences. Although a very good knowledge in AI-based algorithms is required to fully understand the technical details, a basic knowledge is sufficient to understand the potential of these methods and their applications.

Content

The goal of these seminars on Artificial Intelligence in chemistry-related topics is to promote this line of research, spark new ideas, and boost exchanges with the community.

Speakers will showcase the most recent algorithmic developments and applications. The seminars, given by EPFL and non-EPFL experts in the field either from academia or industry, are addressed to students and researchers from EPFL who have expertise in chemistry, physics, life, and material sciences.

This series of monthly seminars will allow attendees to understand the research done by leaders in the field, the implications of Artificial Intelligence on chemistry and beyond, and to create new ideas for their research activities. In particular, the attendees will:

- 1) acquire technical skills in the different types of artificial intelligence-based algorithms
- 2) have an overview of the state of the field and will be able to put recent work in context
- 3) explore concrete applications in chemistry, physics, life, and material sciences.

The speakers will be invited to come at EPFL and will visit the labs for one day, in order to favor interactions and boost collaborations. The invited speakers and talk titles will be announced one month in advance. In case the seminar will take place online, recordings will be made accessible on SWITCHtube with the agreement of the speaker.

At the end of the semester, the students are required to deliver a report summarizing the main topics addressed in the seminars with a special emphasis on one particular seminar, and a critical assessment of what they learned.

Note

Fall 2021

Keywords

Artificial Intelligence-based algorithms, Artificial Intelligence applications in chemistry, physics, life and material

Keywords: sciences, seminar series

Learning Prerequisites**Recommended courses**

Recommended courses
Networks, CS-456

1) Machine Learning, CS-433, 2) Deep Learning EE-559, 3) Artificial Neural

Assessment methods

Term paper

Resources

Websites

- <https://www.epfl.ch/schools/sb/research/isic/news-events/machine-learning-seminars-che-650/>