

## Artificial intelligence and computational social choice

**Level:** M2

**Track:** *Economics, Data and Decision Science*

**Semester :** 1

**Teaching hours:** 21 hours of lectures

**Teaching language:** English

**Teacher:** Fede Fioravanti

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### Course's objectives:

The primary goal of this course is to explore computational social choice, with a special focus on judgment aggregation. More broadly, students will examine the connections between social choice theory and contemporary challenges in artificial intelligence, gaining insight into how these concepts inform and enhance modern AI applications.

### Lesson plan:

The first part of the course covers the topic of judgment aggregation. The second part explores the intersection between Voting theory and Artificial Intelligence

### Skills developed:

- Understanding core concepts of social choice and judgment aggregation, including formal models, key properties, and theoretical limitations.
- Understand interdisciplinary connections between social choice, logic, philosophy, and artificial intelligence.
- Develop critical thinking and communication skills to analyse research problems and present formal arguments effectively.

### Grading system:

The final grade consists of a weighted sum of a quiz, participation, a group presentation, and an oral presentation. The quiz covers all the theoretical content on judgment aggregation. The oral presentation consists of presenting some research papers.

### Prerequisites:

Some knowledge of Social Choice Theory is recommended, although not necessary, as this course is self-contained.

### Bibliography / references:

- Handbook of Computational Social Choice, by Brandt, Conitzer, Endriss, Lang and Procaccia.
- Research papers will be provided for this course.