Advanced Decision Analysis, Game Theory

ECTS : 3

Description du contenu de l'enseignement :

This course aims at studying the relations between democracies and digital processes or tools. The course studies the concept of polarization (fragmentation) and how to measure it on social networks. It defines and studies the concepts of echo-chambers and filter bubbles. Formal models of how information propagates on social networks are presented and helps at studying the problems of electoral manipulation. This study is also seen under the lens of social bots, deep fakes, and misinformation. Formal measures as centrality indices are also presented to measure inequalities within the users of a social network (inequality with respect to access to information).

The course also studies digital tools which can help in organizing more participative democratic processes as sortition processes, participatory budgeting campaigns, and elections with flexible delegation processes.

The course uses activities using Jupyter notebooks and the Python language to test the formal tools which are presented on synthetic and real datasets.

Compétence à acquérir :

- Master formal tools to model and analyse conflicts, notably the ones related to digital processes/tools.
- Be able to fetch and analyse data on a conflict of interest.

Mode de contrôle des connaissances :

The course is evaluated by a project.

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