

# Decision Procedures for Artificial Intelligence

## INF656L

Alexandre Chapoutot and Sergio Mover

IP Paris – Computer Science Masters DataAI and CPS

2022-2023



# Course Outline

Main goals of the course:

- Know the main principles behind logical agents in AI and System verification;
- To be able to model decision problems using logical formulas;
- Know the solving algorithms for SAT and SMT solvers.

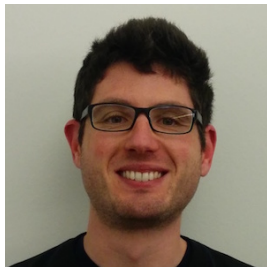
**Remarks:**

- consider unquantified logical formula
- consider exhaustive semantic methods

# Teaching team



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# Agenda

Course website

<https://perso.ensta-paris.fr/~chapoutot/teaching/master-logic/>

SAT Part – Alexandre Chapoutot

November 30, 2022 Propositional Logic and Modelling

December 7, 2022 Into Algorithms of SAT Solvers

December 14, 2022 AI Applications

SMT Part – Sergio Mover

January 4, 2023 First Order Logic and Modelling

January 11, 2023 Equality and Uninterpreted Functions (EUF) Theory

January 18, 2023 Linear (Real/Integer) Arithmetic Theories

January 25, 2023 System verification applications

**February 1, 2023 Final exam** Oral presentation