

Autonomous and Adaptive Systems

Introduction to the Course/Administrivia

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Topics of the Module

- ▶ Introduction to the design of Autonomous Systems
- ▶ Reinforcement Learning
- ▶ AI and Creativity: Generative Deep Learning
- ▶ Algorithmic Game Theory and Multi-agent Learning
- ▶ Bio-inspired adaptive systems
- ▶ Autonomous and mobile robots, driverless cars and intelligent transportation systems
- ▶ Ethical implications of AI
- ▶ Machine intelligence, super-intelligence, self-awareness and controllability

Afternoon Sessions

- ▶ In the afternoons, we will have a variety of activities, including practical sessions, discussion of research papers with students' presentations.
- ▶ The participation to these activities contributes to the final mark as discussed above.

Administrivia: Assessment

- ▶ The assessment will be based on an oral exam (90%) and class participation (10%).
- ▶ 6 oral exam sessions that will be announced on the course webpage and on the institutional website.

Administrivia: Assessment

- ▶ 6 exams per year.
- ▶ The exam will be structured as follows:
 - ▶ Discussion of a compulsory mini-project with presentation (max 3 slides + slide for the title);
 - ▶ A working demo is welcome (if possible/appropriate).
 - ▶ Questions about the topics covered during the module.

Administrivia: Assessment

- ▶ The title and type of mini-project does not need to be approved in advance.
- ▶ An up to 6-page short report (paper-style) about the project has to be submitted in advance, in any case before the exam registration deadline.
- ▶ You need to submit the code together with the report.

Administrivia: Project

- ▶ Suggestions of potential projects will be made during the course.
 - ▶ Ideal project: replication of experiments presented in a paper or other state-of-the-art results (and, why not, improving over it).
 - ▶ Another ideal project: try to tackle a problem that has not been studied before.
 - ▶ Many material online: reusing/repackaging code is not considered a valid project.
- ▶ The report/code will be checked for plagiarism: please avoid very unfortunate situations!

Administrivia: Format of the Report

- ▶ The report has to be written in English.
- ▶ The report must be submitted using the NeurIPS LaTeX style that can be found at this address:

<https://neurips.cc/Conferences/2021/PaperInformation/StyleFiles>