

# Autonomous and Adaptive Systems

## Introduction to the Course/Administrivia

Mirco Musolesi

[mircomusolesi@acm.org](mailto:mircomusolesi@acm.org)

# Contact

- ▶ Email address: [mirco.musolesi@unibo.it](mailto:mirco.musolesi@unibo.it)
- ▶ Personal website: <https://www.mircomusolesi.org>
- ▶ Office hours: please send me email at the address above.

# 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 presentations made by students.
- ▶ 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/2020/PaperInformation/StyleFiles>