


Syllabus

Ethical, Legal and Societal Aspects of AI and Autonomous Systems, 3hp

Issued by the WASP graduate school management group  *draft*.

Main field of study

AI/mlx, AI/math, AS, *WASP-HS*

Course level

PhD student course

Course offered for

PhD Students in the WASP graduate school and in the WASP-HS graduate school

Entry requirements

N/A

Intended learning outcomes

- LO1. Summarize and identify of the Ethical, Legal, Societal (ELS) challenges that arise upon the development, deployment, and usage of intelligent and autonomous systems.
- LO2. Understand the legal and regulatory context of development and use of intelligent and autonomous systems.
- LO3. Analyse the decisions made during a system's lifecycle and their relationship to individual and organisational accountability and responsibility.
- LO4. Relate socio-technical mechanisms, within the scope of the *Fairness-Accountability-Transparency* research community, for the effective socially-beneficial use and governance of intelligent and autonomous systems recognise the drawbacks and benefits of core mechanisms.
- LO5. Explain and apply the core non-technical skills for the responsible design of Ethical, Legal, Social, AI systems.

By completing the above outcomes, the student will have a fundamental understanding of how intelligent systems influence—and are influenced by—our societies and of the socio-ethical responsibilities they have as developers and users of such tools.

Course content

The course introduces the fundamental aspects of *AI ethics* by providing a holistic multidisciplinary view of the discipline. The course structure is such as to introduce students to the impact intelligent and autonomous systems have on societies and individuals (LO1) and ongoing state-of-the-art discussions related to ELS aspects of AI (LO2). This introduction will be followed by a critical discussion of where accountability and responsibility lie for ethical, legal, and social impacts of these systems, considering decision points throughout the

development and deployment pipeline (LO3). With this knowledge in mind, students will be introduced to socio-technical approaches for the governance, monitoring and control of intelligent systems as tools for incorporating constraints into intelligent system design (LO4). Finally, learners apply these skills on a simulated responsible design problem (LO5). The course is, for simplicity, divided into following thematic modules:

- **Introduction to AI Ethics:** Establishes the motivation behind the field of AI ethics by using real-world use cases related to autonomous operation, algorithmic biases, generation of disinformation, and attempts to escape accountability. (LO1)
- **Introduction to Legal and Regulatory aspects (LO2)**
 - Guidelines and agencies landscape
 - Standardisation initiatives
 - Legal constraints and implications
 - Legal landscape (AI never operates in a lawless world)
- **Responsible Development and use of intelligent and autonomous**
 - **Responsibility *In* Design:** processes that go around the development, deployment, and usage of a system (e.g. process standards, traceability of decisions, etc) (LO3)
 - **Responsibility *For* Design:** stakeholders and power distribution identification and analysis; understanding how to balance conflicting ELS requirements (LO3)
 - **Responsibility *By* Design (FACTT):** system behaviour; e.g. checking and mitigating unwanted biases, ensuring transparency, developing fallback (LO4)
 - **Responsibility *For* Designers:** the codes of conduct, chain of responsibility, and critical individual decisions that can be made. (LO5).

Each module will be delivered to the students through a combination of teacher and student-led activities. Lectures will provide the theoretical underpinning needed for the practical component. Students will conduct problem-based learning activities where they will discuss—and come up with solutions to—real-world problems related to the field.

Teaching and working methods

The course is given in a two-day block format with varying session formats. These include student-led activities (e.g. problem-based solving group discussions) and teacher-led activities (e.g. lectures). Lectures are provided by both the course lecturers and external guest speakers.

On the last day of the course, we are using a serious game, Protostrategos, to tie all the material together. As part of the game, students will role play multiple stakeholders and work on a series of tasks. An open discussion between all the class participants follows and concludes the course. A take-home exercise will also be given to the students.

Examination

To pass the students must attend the whole course and do the assignments.

Assignment: Critically evaluate the ELS aspects of their projects, applying the RAIN tool.

Grades

Fail or Pass (retake is not possible given that full attendance is mandatory)