Responsible AI for non-AI students (T15)

Credit weighting:	2.0 ECTS credits
Teaching period(s):	13 July 2026 – 17 July 2026
Level:	Bachelor level
Teaching methods:	50 hr(s) lectures/field excursions + assignments (including self-study)
Course leader:	Sieuwert van Otterloo, PhD
Lecturer(s):	Sieuwert van Otterloo, PhD Hubert Fonteijn, PhD Sietske Tacoma PhD

Description

The development of Artificial Intelligence (AI) has had a large impact on education and research: AI, when used responsibly, can support data analysis, decision making and creative processes, but AI can also lead to problems such as bias, unexpected mistakes and fraud. It is therefore important for any student to understand what AI is, how it works, what the risks of AI are and what rules are in place to guide the responsible use of AI. The Ai research group of the Utrecht University of Applied Sciences has therefore created a one-week program intended to teach the fundamentals of the responsible use of AI. The program includes both learning to use AI, and about the ethical and legal implications. The program was designed to be interesting for people new to AI (bachelor students from other fields) up to experienced graduate students that want to discuss the latest developments with students from other fields.

The program is designed to be practical and interactive, and includes the following:

- A demonstration of using AI and machine learning on datasets, using open datasets and python notebooks. If you do not have coding experience, you will learn some of the basics and how to use code examples and libraries.
- Fundamentals of large language models, use cases for language models and how to use them using prompt engineering.

- The ethics of AI, including how AI impacts fundamental rights and how the AI Act tries to regulate the use of AI. Several interesting responsible AI cases will be discussed in small groups
- Examples of the use of AI, machine learning or data science in research. Participants that are doing research at MSc or PhD level are invited to present their own work in a 'conference track'

The course consists of a combination of lectures, practical sessions using the Python programming language, and group discussions.

Lecturers

Sieuwert van Otterloo, PhD
Sietske Tacoma PhD
Hubert Fonteijn, PhD

Target audience

Bachelor and Master students from all backgrounds are welcome, including engineering, business, law, philosophy and arts students. Some computer or programming experience is helpful but not required. The summerschool is designed for a mixed audience, MSc and PhD students are also welcome. The course includes practical sessions where students will use Python and Jupyter Notebook to complete assignments.

Please note that students should bring their own laptop computer.

A good command of English is absolutely necessary.

Aim of the course

The aim of the course is to give students with a non-AI background an understanding of Artificial Intelligence, recent developments, risks and how to use it responsibly.

Study Load

Fifty hours.

Course Calendar

Agenda

Monday : AI fundamentals	Tue: AI decision making	Wed: Generative / creative AI	Thu: AI testing and compliance	Fri: AI in research and AI frontiers
Introduction to data science, AI and machine learning	Decision making algorithms and AI training	LLMs, word embeddings and generative AI	AI bias and testing, using image recognition	Using AI in research – conference track and rules
Use case: Responsible Human-AI Cooperation for Emergency Responders	Explainable AI and how to design and deploy AI decision making	Generative AI – prompt engineering and risks	AI laws, auditing and governance -	Frontiers in AI research
			16:00: Drinks with AI research group	

Structure of each day

Time	Content	Remarks
9.00 – 9.15	Walk-in and coffee	Monday: be in hall at 9.00, lecture starts at 9.30
9.15 – 9.30	Recap and questions	Discuss previous day. On day 1: check if people have practical questions
9.30 – 10.30	Theory	Presentation by lecturer of key concepts
10.30 - 10.45	Coffee break	
10.30 – 11.45	Practical session	Working on assignements, individual or in groups
11.45 – 12.15	Discuss practice results, conclusion	
12.15 – 13.15	Lunch	
13.15 – 14.30	Theory	Presentation by (guest) lecturer of key concepts
14.30 – 14.45	Coffee break	
14.45 – 15.45	Practical session	Working on assignements, individual or in groups
15.45 – 16.15	Discuss practice results, conclusion	
16.15 – 16.30	Time for individual questions	Lecturer is available for individual questions

* Day one will start later at 9.30