

AI in Social Science

2026 – Spring Semester; Vilnius University IIRPS

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Aim:

- Explore the intersection between the social sciences and the AI;
- Introduce the students to the core concepts and vocabulary in the field;
- Understand the main issues related to the AI as an object of study for the social sciences;
- Understand the main ways how the social scientists can benefit from the AI in their work and research

Learning Outcomes:

- Students will be able to understand and use the key concepts from the AI vocabulary (ANNs, transformers, LLMs, etc.);
- Students will understand the key historical developments and trends of the AI and their implications for individuals and societies.
- Students will be able to identify and critically evaluate the main ethical issues related to the AI, such as data ownership, algorithmic fairness and bias.
- Students will gain basic knowledge of Python programming language.
- Students will become familiar with the key stages of organising a computational social sciences project;
- Students will have independently implemented a small scale computational social sciences project using AI to enrich or analyse the data.

Grading:

- Seminars 20%
 - Show up (students can miss up to 2 seminars without providing a valid reason)
- Essay 30 %
 - 3 000 - 4 000 words;
 - Due April 12th;
- ML project- 50%;
 - Due May 24th

Failing a single component does not mean failing the course.

Lectures:

Lecture 1: Introduction and Key Concepts

Lecture 2: History of AI

Lecture 3: History of AI 2: Deep Learning

Lecture 4: Current Issues in AI 1: Bias, Hallucinations and Algorithmic Fairness

Lecture 5: Current Issues in AI 2: Privacy and Data Ownership

Lecture 6: Will this route lead to AGI? No.

Lecture 7: AI and Defense (Guest lecture)

Lecture 8: ML Lab: Logreg and model metrics
Lecture 9: ML Lab: Neural networks
Lecture 10: ML Lab: Basic NLP
Lecture 11: ML Lab: Text embeddings
Lecture 12: ML Lab: ML and Text embeddings
Lecture 13: ML Lab: Help with Lab assignments
Lecture 14: Government institutions and data management