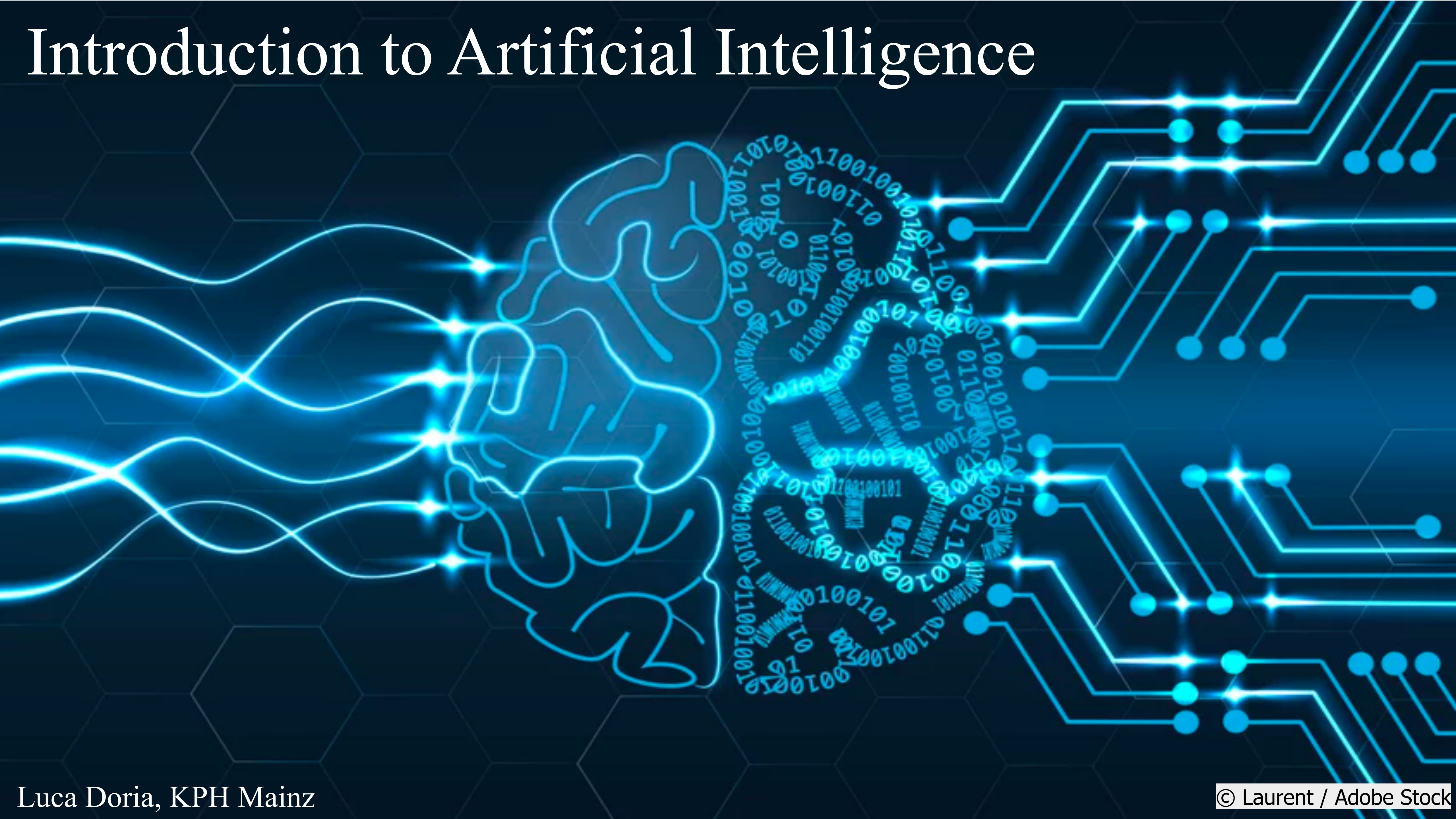


Introduction to Artificial Intelligence



A note

This course is not specifically about concrete AI tools (like e.g. neural networks, although we will discuss them) but is more centred about the tools you need for understanding in general what AI is, its wide scope, problematics, limitations, and historical development.

Still, we will discuss and implement real algorithms and apply them to concrete cases.

As an introduction to AI, the course's aim is to give you a wide perspective on the subject.

Artificial Intelligence: Ask an AI!



You

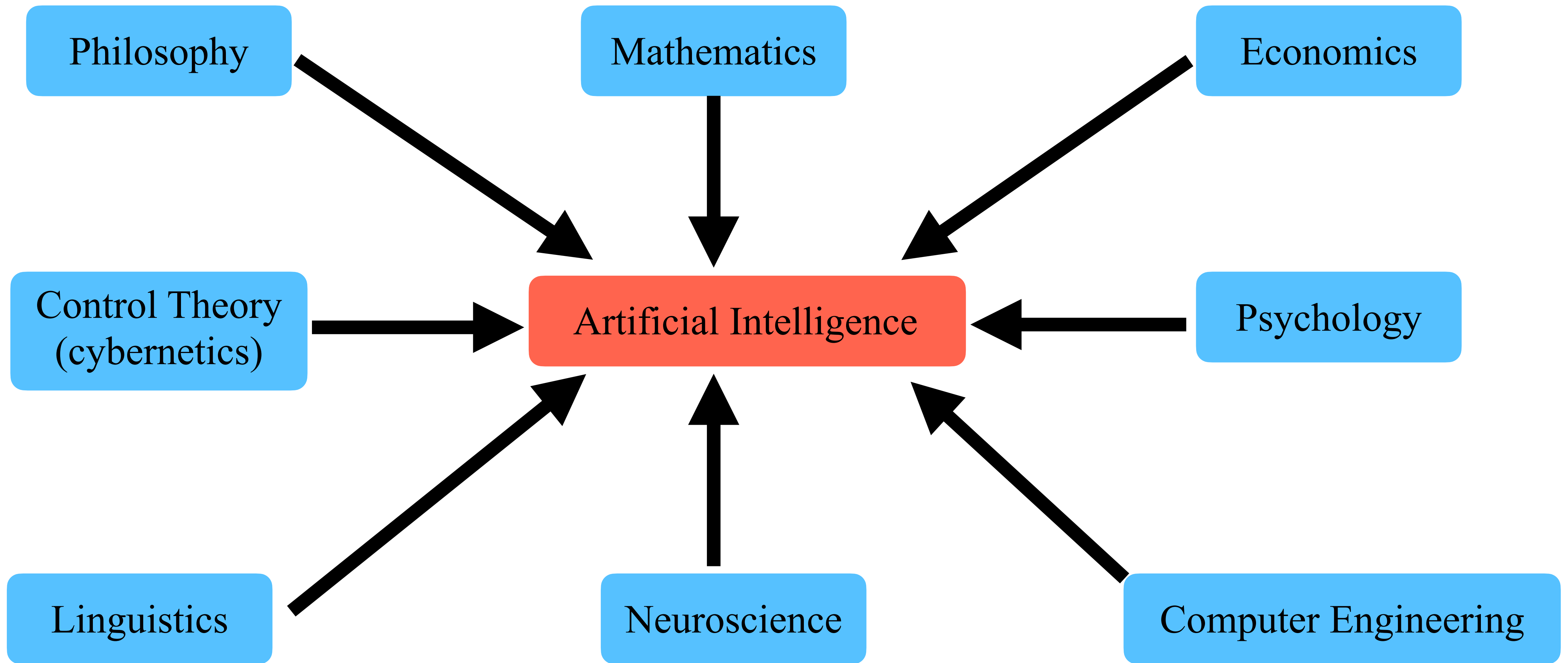
What is artificial intelligence?



ChatGPT

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and mimic human-like cognitive functions. These machines are designed to perform tasks that typically require human intelligence, such as learning, reasoning, problem-solving, perception, speech recognition, and language understanding.

Contributions to AI from other fields



Syllabus

We will try to cover most of the following topics:

- What is AI?
- An interpretation key: Agents
- Solving with searching
- Logic (first order, predicate)
- Games
- Knowledge Representation
- Uncertain Knowledge: Probability
- Fuzzy Logic
- Planning
- Machine Learning (supervised, unsupervised, deep, LLMs, ...)

Organization



- * 2h theoretical lectures (mostly slides) / week
- * 2h Exercises based on weekly assignments
- * Klausur: Written exam
- * Requirements: 50% points for the exercises
- * To be discussed: software project carried out in groups

Organization : SoSe 2025

Lectures:

Room 03-428 (Mittelkreutzbau), h12:15 - 14:00

- At least $>50\%$ of the exercises must be completed for the “Klausurzulassung”.
- Klausur: written exam (schriftlich).

Course Schedule

1	<u>Tue, 15. Apr. 2025</u>	<u>12:15</u>	<u>13:45</u>
2	<u>Tue, 22. Apr. 2025</u>	<u>12:15</u>	<u>13:45</u>
3	<u>Tue, 29. Apr. 2025</u>	<u>12:15</u>	<u>13:45</u>
4	<u>Tue, 6. May 2025</u>	<u>12:15</u>	<u>13:45</u>
5	<u>Tue, 13. May 2025</u>	<u>12:15</u>	<u>13:45</u>
6	<u>Tue, 20. May 2025</u>	<u>12:15</u>	<u>13:45</u>
7	<u>Tue, 27. May 2025</u>	<u>12:15</u>	<u>13:45</u>
8	<u>Tue, 3. Jun. 2025</u>	<u>12:15</u>	<u>13:45</u>
9	<u>Tue, 10. Jun. 2025</u>	<u>12:15</u>	<u>13:45</u>
10	<u>Tue, 17. Jun. 2025</u>	<u>12:15</u>	<u>13:45</u>
11	<u>Tue, 24. Jun. 2025</u>	<u>12:15</u>	<u>13:45</u>
12	<u>Tue, 1. Jul. 2025</u>	<u>12:15</u>	<u>13:45</u>
13	<u>Tue, 8. Jul. 2025</u>	<u>12:15</u>	<u>13:45</u>
14	<u>Tue, 15. Jul. 2025</u>	<u>12:15</u>	<u>13:45</u>

Course Material

Slides and exercises can be downloaded at:

<https://www.staff.uni-mainz.de/doria/AI.html>

