AI Curriculum

Specialization Area Reasoning

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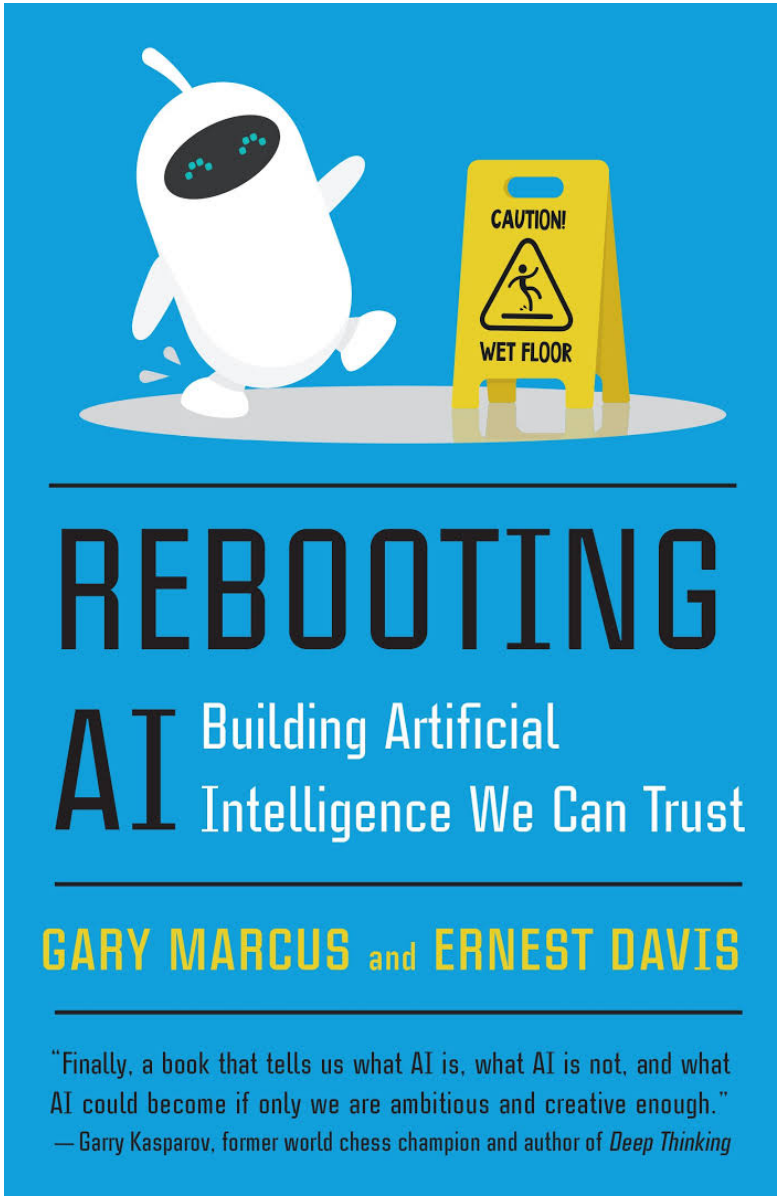
Reasoning and Knowledge Representation:

- How to formally/computably represent knowledge and reasoning?
(logic, symbolic methods, programming, . . .)

Possible topics: modal logics (epistemic, temporal, . . .), argumentation theory, theory of computation, etc

- What is knowledge, what is reasoning?
(philosophy, linguistics, psychology, . . .)

Possible topics: explainable AI, philosophy of mind, etc



2019

Future of AI: a combination of symbolic and subsymbolic methods.

Possible study paths

Primary electives:

- Computational argumentation (term 1) – Henry Prakken
- Logic and language (term 2) – Gijs Wijnholds
- Logic and computation (term 3) – Rosalie Iemhoff
- Logics for safe AI (term 4) – Natasha Alechina

CA Introduction to the computational study of argumentation in AI, focusing on formal models of argumentation and their application in areas like commonsense reasoning, legal reasoning and multi-agent interaction.

L&L Advanced methods and ideas in the logical analysis of language, especially in relation to type-logical grammars, the parsing-as-deduction paradigm, and their combination with formal semantics of natural language.

L&C The role of computation and logic in AI. Lectures on models of computation, reading of papers on e.g. logical complexity, quantum computation, programming paradigms, logic and model checking.

LSAI Ensuring the safety and reliability of autonomous AI agents by using formal proofs to verify that the system behaves in accordance with the specified objectives.

Possible secondary electives

Reasoning about meaning in linguistic communication (term 1) • •

Intelligent agents (term 1)

Foundations of sound patterns (term 1) • •

Topics in epistemology & phil. of science (term 2) (2022 – 2023) • •

Topics in philosophy of mind (term 2) (2023 – 2024) • •

Digital ethics (term 3) • •

Multi-agent systems (term 3)

Cognitive and computational aspects of word meaning (term 4) • •

Philosophy of neuroscience (term 4) •

Courses with a • are at the Faculty of Humanities and may have different enrollment dates than the courses at the Faculty of Sciences!
Humanities late enrollment term 4: 4 April 09.00 – 5 April 23.59.

Courses • are 5 EC, but can be extended to 7,5 EC for AI students, ask the lecturer.

Courses with a maximum number of participants: be quick to enroll!

Department of Philosophy

Relevant for Master Thesis and Research Internships:

Expertise in the department in relation to AI:

- Logic in AI
- Philosophy in/of AI
- Mathematical Logic
- Philosophical Logic
- Complexity Theory
- Ethics

If you want to know more, please contact me.