

TUM | TUM-IAS | Deutsches Museum | Hochschule für Philosophie | Alma Mater Europaea - ECH  
I supported by Udo Keller Foundation; European Academy of Science and Arts

**Monday, 31 August - Friday, 4 September 2026**

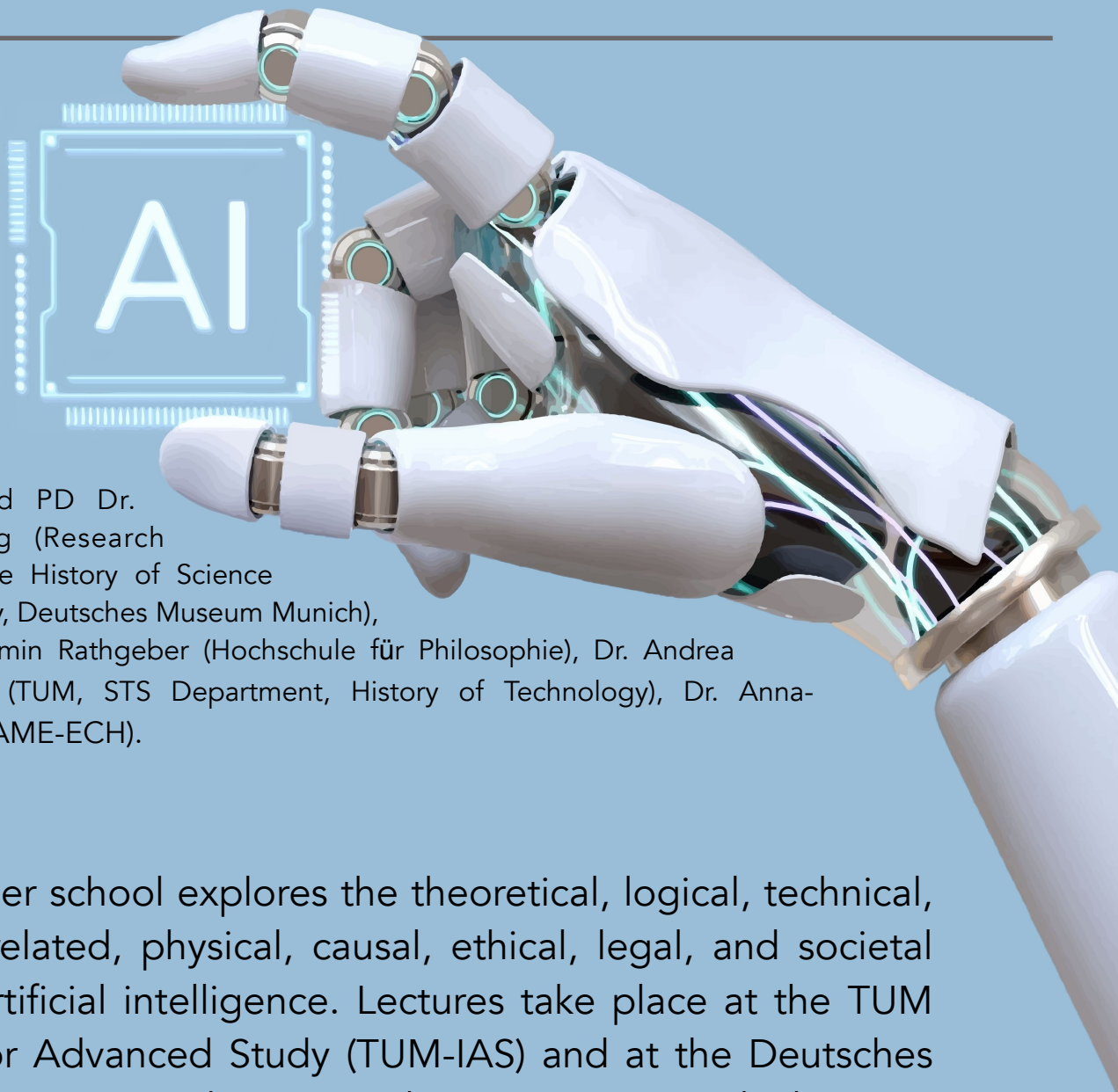
# Limits of Artificial Intelligence

## Organizers:

Prof. Dr. Stefania Centrone (TUM), in cooperation with PD Dr. Ulf Hashagen and PD Dr. Rudolf Seising (Research Institute for the History of Science and Technology, Deutsches Museum Munich), Prof. Dr. Benjamin Rathgeber (Hochschule für Philosophie), Dr. Andrea Reichenberger (TUM, STS Department, History of Technology), Dr. Anna-Vanadis Faix (AME-ECH).

## Scope

This summer school explores the theoretical, logical, technical, hardware-related, physical, causal, ethical, legal, and societal limits of artificial intelligence. Lectures take place at the TUM Institute for Advanced Study (TUM-IAS) and at the Deutsches Museum. Visits to the Deutsches Museum and the LRZ Supercomputing Center complement the academic program.



# Schedule

## Monday — Opening, Logical and Theoretical Limits, Humanoid Robotics, Computer Architecture

Time	Session
09:00–09:30	Michael Molls — Opening IAS
09:30–10:15	Stefania Centrone — Logical Limits I
10:15–10:30	Coffee Break
10:30–11:15	Klaus Mainzer — Theoretical Limits I
11:15–12:00	Hendrik Poschmann (Hochschule Niederrhein) — Humanoid Robotics: Limits of AI I
12:30–13:45	Lunch
13:45–14:30	Klaus Mainzer — Theoretical Limits II
14:30–14:45	Coffee Break
<b>Joint Session</b>	
15:00–16:30	Group Work - Anna-Vanadis Faix: Theoretical, Logical, Robotics, and Computer Architecture Limits

## Tuesday — Logical, Technical, Robotics + Visit: Deutsches Museum

Time	Session
09:30–10:15	Stefania Centrone — Logical Limits II
10:15–11:00	Hendrik Poschmann (Hochschule Niederrhein) — Humanoid Robotics: Limits II
11:00–11:15	Coffee Break
11:00–11:45	Benjamin Rathgeber — Technical Limits I
12:00–13:15	Lunch
14:00–15:30	Visit: Deutsches Museum (AI & Computing Collections)

## Wednesday — Ethical I, Technical II, Hardware Limits

Time	Session
09:30–10:15	Benjamin Rathgeber — Technical Limits II
10:15–10:30	Coffee Break
10:30–11:15	Jörg Wernecke — Ethical Limits I
11:15–12:00	Ulf Hashagen — Hardware Constraints I
12:00–13:15	Lunch
13:15–14:00	Ulf Hashagen — Hardware Constraints II
14:00–14:15	Coffee Break
<b>Parallel Sessions</b>	
14:15–15:00	Group Work: Technical and Hardware Limits
15:00–16:00	Group Work - Anna-Vanadis Faix: Ethical Limits

## Thursday — Physical/Causal, Quantum, Ethical II, Societal + Visit: LRZ

Time	Session
09:30–10:15	Rudolf Seising — Limits of Artificial Thinking and Intelligence
10:15–10:30	Coffee Break
10:30–11:15	Roberto Giuntini — Quantum Limits I
11:15–12:00	Jörg Wernecke — Ethical Limits II
12:00–12:45	Andrea Reichenberger — Societal Limits of AI I
12:45–13:15	Lunch
13:15–15:00	Visit: LRZ Supercomputing Center –Max 30 participants

## Friday — Physical/Causal II, Quantum II, Legal II, Societal II

Time	Session
09:30–10:15	Rudolf Seising — Limits of Artificial Learning
10:15–10:30	Coffee Break
10:30–11:15	Roberto Giuntini — Quantum Limits II
11:15–12:00	Klaus Vieweg — Legal Limits I
12:00–12:45	Andrea Reichenberger — Societal Limits of AI II
12:45–13:45	Lunch
13:45–14:30	Klaus Vieweg — Legal Limits of AI II
14:30–14:45	Coffee Break
14:45–16:15	Group Work – Anna-Vanadis Faix: Integrating the Limits (Together Session)

## Examination Requirements (Prüfungsleistung 6 ECTS)

### Hochschule für Philosophie:

Bachelor's seminar paper: 28,800–43,200 characters.

Extended Master's seminar paper (20–24 pages): 48,000–57,600 characters.

The paper must discuss three different types of limits of AI and explicitly refer to the lectures associated with each of these limits.

Deadline: End of the Winter Semester 2026/2027.

### TUM

Oral examination and in-depth discussion of three different types of limits of AI, with explicit reference to three topics related to the lectures associated with each of these limits.

Deadline: End of the Summer Semester 2026.

## Invited Speakers & Organizing Committee

**Stefania Centrone** is Professor of Philosophy and Theory of Science at the Technical University of Munich (TUM School of Social Sciences and Technology); works on logic and AI.

**Anna-Vanadis Faix** is CEO of Alma Mater Europaea – ECH, Assist. Prof. (AMEU) and Lecturer at the University of Tübingen; works on rationality, ethics, and innovation.

**Roberto Giuntini** is Professor of Logic and Philosophy of Science at the University of Cagliari and alumnus of the Institute for Advanced Study of TUM; works on foundations of quantum mechanics and non-classical logics.

**Ulf Hashagen** is Director of the Research Institute at the Deutsches Museum; works on history of computing.

**Klaus Mainzer** is TUM Emeritus of Excellence and President of the European Academy of Sciences and Arts; works on complexity and AI.

**Michael Molls** is TUM Emeritus of Excellence, former Chair of Radiation Oncology, and Director of the TUM Institute for Advanced Study; works on the topic of sustainability included the field of public health and oncology.

**Hendrik Poschmann** is Professor at Hochschule Niederrhein; works on humanoid robotics and AI systems.

**Benjamin Rathgeber** is Professor at the Hochschule für Philosophie München; works on philosophy of AI and technology.

**Andrea Reichenberger** is Senior Researcher at the Technical University of Munich; works on history and philosophy of computing and AI.

**Rudolf Seising** is Senior Researcher at the Research Institute for History of Science and Technology of the Deutsches Museum, Munich and private lecturer (Privatdozent) at the LMU; works on AI history and fuzzy logic.

**Klaus Vieweg** is Professor of Law at FAU Erlangen–Nürnberg, member of acatech - the German Academy of Science and Engineering; works on law, technology, and digital regulation.

**Jörg Wernecke** is Senior Lecturer at the Technical University of Munich; works on ethics and responsibility in AI.