Preliminary Programme

(as of September 2025)

The "what, how and why" of AI

Artificial intelligence has become one of the hottest topics not only in academia and industry, but also in politics and society. Markedly different views exist on what should be counted as AI, which directions should be followed in AI research and applications, and how AI can be used to bring benefits to industry and society, rather than causing risk and disruption.

What kind of AI do we need and should we want, especially in realms where AI systems physically interact with their environment and with us? How can we best overcome the limitations and weaknesses of existing AI systems, such as ChatGPT? How can we separate hype and excitement from serious scientific and technological progress? And why should we pursue the development and broad use of artificial intelligence in the first place?

These and other timely questions will be discussed by Humboldt award winners from around the world, who are deeply involved in shaping the development of AI and its applications. The Bonn Humboldt Award Winners´ Forum offers a unique opportunity, especially for early-career scientists, to obtain a broad view of artificial intelligence, which covers diverse scientific disciplines including computer science, cognitive science, philosophy and several other disciplines.

Conference Language: English

Scientific Committee:

Holger Hoos
Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen, Germany

Oliver Brock
Technische Universität Berlin, Germany

Vincent Müller
Friedrich-Alexander Universität (FAU) Erlangen-Nürnberg, Germany

Wednesday, 22 October 2025

from 1:00 p.m.	Arrival and registration of the participants	*Kranz Parkhotel Siegburg*
4:00 p.m.	Bus transfer to University of Bonn	
5:00 p.m.	**Opening Ceremony**	
	Welcome and Opening	*University of Bonn*

Michael Hoch
Rector of the University of Bonn

Gabi Mayer
Mayor of Bonn

Markus Zanner
Secretary General
Alexander von Humboldt Foundation

Holger Hoos
Alexander von Humboldt Professor for Artificial Intelligence
RWTH Aachen, Germany

Keynote Lecture

"Reasonable AI"

Kristian Kersting
Technische Universität Darmstadt, Germany

Panel Discussion (Moderation: Holger Hoos)

Milica Gašić
Heinrich-Heine-Universität Düsseldorf, Germany

Teresa Head-Gordon
University of California, Berkeley, USA

Kristian Kersting
Technische Universität Darmstadt, Germany

afterwards	**Reception**	
from 9:00 p.m.	Transfer back to hotel	

Thursday, 23 October 2025

from 8:00 a.m.	Registration	*Kranz Parkhotel Siegburg*
9:00 a.m.	**Welcome and Introduction by the Scientific Committee**	
	Scientific Lectures – Panel I	
9:15 a.m.	**"Smart Advice: Intelligent Agents Assisting Humans in the Super AI Era"**	
	Sarit Kraus Bar-Ilan University, Ramat-Gan, Israel	
10:00 a.m.	**"Opportunities and Pitfalls of Physically Interfacing Intelligent Robotics with Human Users"**	
	Heike Vallery RWTH Aachen, Germany	
10:45 a.m.	Coffee break	

11:15 a.m.	**"Safe Physical AI"**
	Andre Platzer
	Karlsruher Institut für Technologie, Germany
12:00 p.m.	**"Moving the Frontiers; The Sponsorship Philosophy of the Alexander von Humboldt Foundation"**
	Steffen Mehlich
	Alexander von Humboldt Foundation
12:30 p.m.	Lunch
2:00 p.m.	**Flashtalks**
	"Embodied Artificial Intelligence for Autonomous, Social Human-robot Interaction with an Android Robot in a Museum"
	Christian Werner Becker-Asano
	Hochschule der Medien (HdM), Stuttgart, Germany
	"Humans Actively Frame Their Thoughts – AI Not, Yet"
	Martin Butz
	Universität Tübingen, Germany
	"A Computer-Driven Strategy for Materials Discovery"
	Soumen Ghosh
	Indian Institute of Technology Madras, Chennai, India
	"Bias or Factual Recall? Understanding How LLMs Compare Entities"
	Jae Hee Lee
	Universität Hamburg, Germany
	"Emotional Signs: Towards the Study of Affective Computing for Sign Language"
	Cristina Luna-Jiménez
	Universität Augsburg, Germany
	"Opinion Dynamics over Migration Networks"
	Lörinc Marton
	Zuse Institut Berlin (ZIB), Germany
	"Human–AI Interaction: Between Tools and Partners"
	Wieland Müller
	Universität Rostock, Germany
	"Investigating Optimal Approaches in Delay-based Reservoir Computing for Image Classification and Denoising"
	Jimmi Herve Talla Mbe
	Technische Universität Ilmenau, Germany
	"CogSteer: Cognition-Inspired Selective Layer Intervention for Efficiently Steering Large Language Models"
	Xintong Wang
	Universität Hamburg, Germany
	"Modeling Emergent Behaviors in Social Networks through Opinion Dynamics"
	Yu Xing
	RWTH Aachen, Germany
2:30 p.m.	**Poster Session**

3:30 p.m.	Coffee break	
4:00 p.m.	**"AI and the Future of Medicine"**	
	Daniel Rückert Technische Universität München, Germany	
4:45 p.m.	**"Machine Learning and Artificial Intelligence for (Bio)Chemistry and Materials"**	
	Teresa Head-Gordon University of California, Berkeley, USA	
5:45 p.m.	Dinner	
7:00 p.m.	Joint walk to Stadtmuseum	
7:30 p.m.	**Dialogue Concert** **"Gödel, Escher, Bach: Perspectives and (Im)Possibilities"-** A playful exploration of Music, Arts and Mathematics	*Stadtmuseum Siegburg*
	This unique dialogue concert features contemporary works by the well-known English composer Graham Waterhouse as well as reflections on the works of Kurt Gödel, Maurits Cornelis Escher and Johann Sebastian Bach.	
9:00 p.m.	**Reception**	
10:00 p.m.	Walk back to hotel	

Friday, 24 October 2025

from 8:00 a.m.	Registration	*Kranz Parkhotel Siegburg*
	Scientific Lectures – Panel II	
9:00 a.m.	**"Powering Robotics with AI"**	
	Angela Schoellig Technische Universität München, Germany	
9:45 a.m.	**"Human-AI Collaboration"**	
	Sumit Gulwani Microsoft Corporation, USA	
10:30 a.m.	Coffee break	
11:00 a.m.	**"Guided data exploration with (semi-)supervised manifold learning"**	
	Guy Wolf Université de Montréal, Canada	
11:45 a.m.	**"AI-Driven Personalization to Support Human-AI Collaboration"**	
	Cristina Conati University of British Columbia, Vancouver, Canada	
12:30 p.m.	Lunch	
2:00 p.m.	**Panel Discussion** **"AI Bust or Boom – and for Whom"** **Oliver Brock (Co-Moderator)** Technische Universität Berlin, Germany **Vincent Müller (Co-Moderator)** FAU Erlangen-Nürnberg, Germany	

Dirk Helbing
ETH Zürich, Switzerland

Angela Schoellig
Technical University of Munich, Germany

Toby Walsh
University of New South Wales, Kensington, Australia

Soumaya Zaghbani
Max Planck Institute of Biophysics, Frankfurt, Germany

3:30 p.m.	Coffee break	
	Section 1	**Section 2**
4:00 p.m.	**"What Will You Use Those Extra GPUs For? Designing Scalable Optical Networks for an AI-Driven World"** **Polina Bayvel** University College London (UCL), England	**"Is Neuromorphic Computing AI's Next Leap?"** **Renan Cipriano Moioli** Universität Münster, Germany
4:20 p.m.	**"AI and the Future of Creativity"** **Toby Walsh** University of New South Wales, Kensington, Australia	**"Learning, reasoning, and structural generalization"** **Hector Geffner** RWTH Aachen, Germany
4:40 p.m.	**"Approximate methodologies for DNN verification and explainability"** **Ferdinando Cicalese** Universita degli Studi di Verona, Italia	**"Combining LLMs with constraint solvers: experience report"** **Etienne Lozes** Université Côte d´Azur, France
5:00 p.m.	**"Multi-Agent Reinforcement Learning"** **Stefano V. Albrecht** University of Edinburgh, England	**"AI applications in cardiac surgical planning"** **Xiaowei Xu** Leibniz-Institut für Analytische Wissenschaften -ISAS- e.V. Dortmund, Germany
5:20 p.m.	Break	
6:45 p.m.	**Reception**	
7:00 p.m.	**Dinner with Dinner Talk** **"The Digital Revolution for Desert"** **Dirk Helbing** ETH Zürich, Switzerland	

Saturday, 25 October 2025

	Cultural Programme	
10:00 a.m.		Meeting at the Hotel for bus transfer
11:30 a.m.	**Boat tour on Rhine with Lunch**	*Kranz Parkhotel Siegburg*
1:30 p.m.	Transfer by bus	*Boat "Filia Rheni"*
2:30 p.m.	**Guided Tour at the Government Bunker**	
4:00 p.m.	Transfer by bus	*Regierungsbunker Bad Neuenahr-Ahrweiler*
4:30 p.m.	**Reception and Guided Tour through Production Hall of Wine manufactory Dagernova**	
afterwards	**Wine Tasting and Farewell Dinner**	
9:00 p.m.	Bus transfer back to hotel	*Dagernova Weinmanufaktur*
approx. 9:50 p.m.	Arrival at hotel	

Sunday, 26 October 2025

until 10:00 a.m.		Check out and individual departure