Artificial Intelligence: Probabilistic Concepts

Spring School, March 16-20, 2026, TU Darmstadt

Fachbereich **Mathematik**
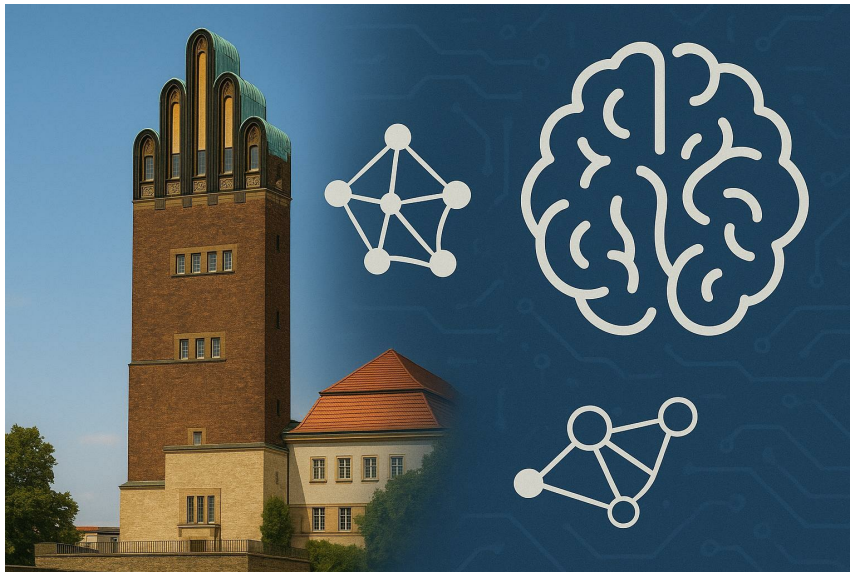
The Meeting

Despite the recent huge popularity and success of AI models, a mathematical understanding of their key aspects is only just emerging. In this year's spring school, we bring some of the leading experts on mathematical aspects of AI to Darmstadt. Our mini courses will be held by

Marco Mondelli (Institute of Science and Technology Austria)
(Title: Trustworthy machine learning through the lens of high-dimensional probability)

and

Andrea Montanari (Stanford)
(Title: Dynamical regimes in gradient based learning)

The main focus of the school will be on probabilistic aspects of the mathematics of AI.
The school aims at PhD students and young post-docs, either already working in the field of "AI and mathematics" or working in probability and desiring to learn about relevant topics and techniques in the area.

There will also be some invited talks in the general topic area of the school. In addition, participants, in particular PhD students, are encouraged to deliver short talks of 10min to introduce themselves and their research interests.

Speakers

Jean Barbier	*International Center for Theoretical Physics (ICTP)*
Lénaïc Chizat (TBC)	*EPFL*
Leif Döring	*Mannheim*
Marco Mondelli	*Institute of Science and Technology Austria (ISTA)*
Andrea Montanari	*Stanford*

Target Audience

The spring school is primarily aimed at PhD studens and postdocs, but everybody is welcome to attend. Participants will be given the opportunity to deliver contributed talks.

Previous schools

The school is a continuation of the Spring schools

"Extrema of logarithmically correlated random fields"	March 24-28, 2025
"Multiplicative chaos and cascades"	March 19-23, 2024
"Probabilistic methods in population biology"	March 27-31, 2023
"Random geometric graphs"	March 28-April 1, 2022
"Complex Networks"	March 2-6, 2020
"Selected topics in stochastic geometry "	Feb. 25 - Mar. 1, 2019
"Spin Systems: Discrete and Continuous "	March 19-23, 2018
"Probability in mathematics and physics "	March 27-31, 2017
"Geometric models in probability"	April 4 - 8, 2016
"Stochastic Analysis of Spatially Extended Models"	March 23 - 27, 2015
"Spatial Models in Statistical Mechanics"	February 24 - 28, 2014

held at TU Darmstadt.

Organizers

[Frank Aurzada (Darmstadt)](#)
[Volker Betz (Darmstadt)](#)
[Matthias Meiners (Gießen)](#)

The meeting is supported by:

Institute of Mathematics of Justus Liebig University Gießen

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