FAU

**Friedrich-Alexander-Universität
Research Center for
Mathematics of Data | MoD**

FAU MoD Lecture Series

AI for maths and maths for AI

François Charton

META | FAIR | ENPC

WWW.MOD.FAU.EU

#FAUMoDLecture

WHEN

- Lecture: Mon. **June 23, 2025**
  16:00H (Berlin time)

- Workshop: Tue. **June 24, 2025**
  09:00H - 16:00H

WHERE

On-site / Online

Friedrich-Alexander-Universität
Erlangen-Nürnberg (FAU)
Room **H12**
Felix-Klein building
Cauerstraße 11, 91058
Erlangen. Bavaria, Germany

Live-streaming @FAUtv:
www.fau.tv/fau-mod-livestream-2025

I will present recent results, demonstrating that language models can be trained, from generated data only, to solve hard and open problems in mathematics. The main difficulty, here, is to generate training data. On the other hand, mathematics provides useful benchmarks for understanding how AI models learn.

Workshop 24.06.2025. On-site / Online
Room: **H11** (09:45H / 14:15H)

- 09:45H AI for maths and maths for AI (F. Charton)
- 10:00H The Turnpike phenomenon for optimal control problems under uncertainty (M. Schuster)
- 10:30H AI in Mechanics (H. Holthusen)
- 11:00H Contribution evaluation in Federated Learning (D. Kuznetsov)
/
- 14:15H AI for maths and maths for AI (F. Charton)
- 14:30H Exact sequence prediction with transformers (G. Fantuzzi)
- 15:00H Discovering the most suitable material model for cardiac tissue with constitutive neural networks (D. Martonová)
- 15:30H Stability of hyperbolic systems with non-symmetric relaxation (L. Liverani)