



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](http://WWW.MOD.FAU.EU)

#FAUMoDLecture

### WHEN

- Lecture: Mon. **June 23, 2025**  
16:00H (Berlin time)
- Workshop: Tue. **June 24, 2025**  
09:45H - 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:

[www.fau.tv/fau-mod-livestream-2025](http://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: **H2**

- 09:45H AI in Mechanics (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)

Room: **H11**

- 14:15H AI in Mechanics (F. Charton)
- 14:30H Stability of hyperbolic systems with non-symmetric relaxation (L. Liverani)
- 15:00H Discovering the most suitable material model for cardiac tissue with constitutive neural networks (D. Martonová)
- 15:30H Exact sequence prediction with transformers (G. Fantuzzi)