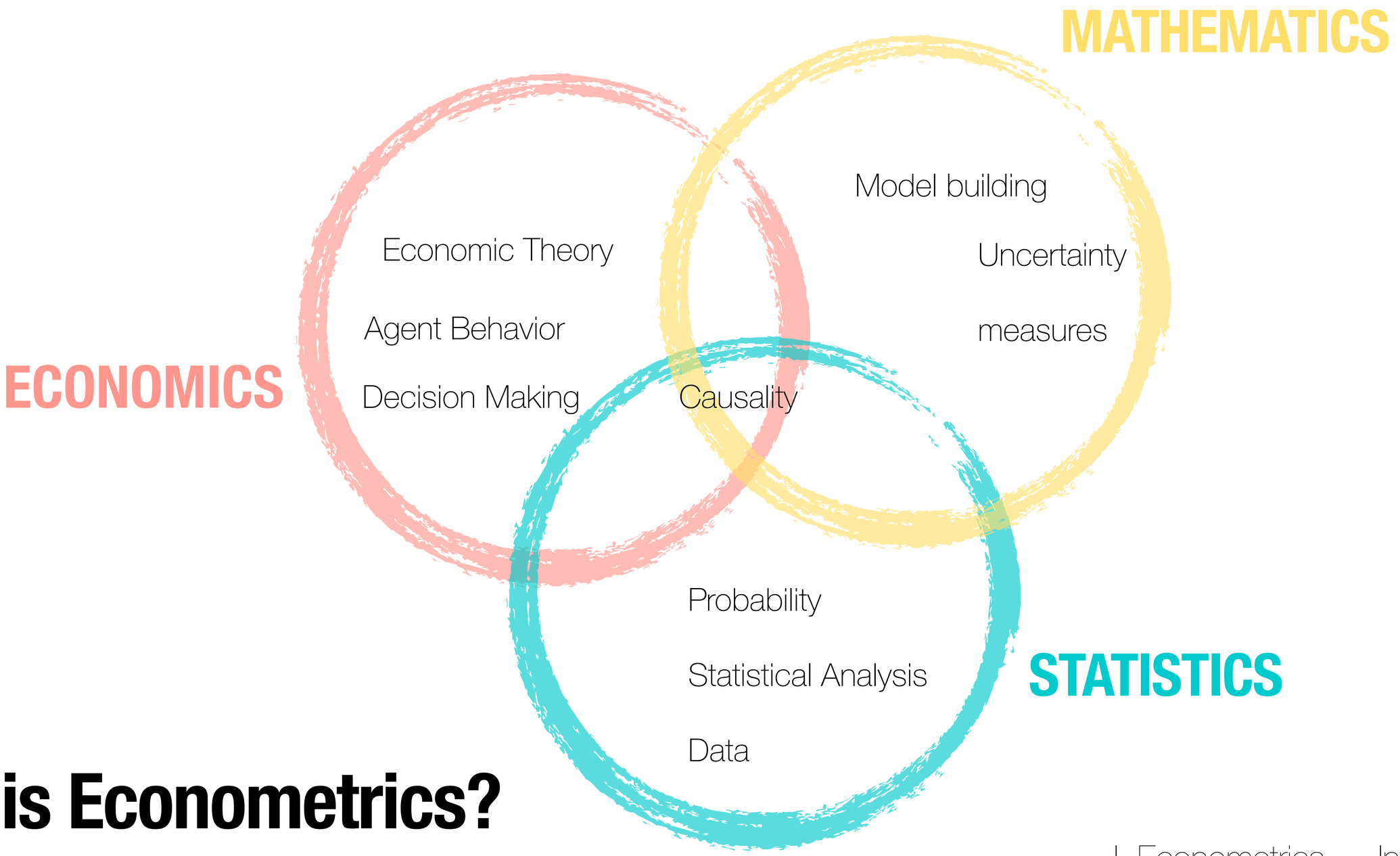
Department of Econometrics

Five Years of Impact Evaluation (2020–2024)

Jozef Baruník
Head of Department

Institute of Information Theory and Automation, The Czech Academy of Sciences



What is Econometrics?

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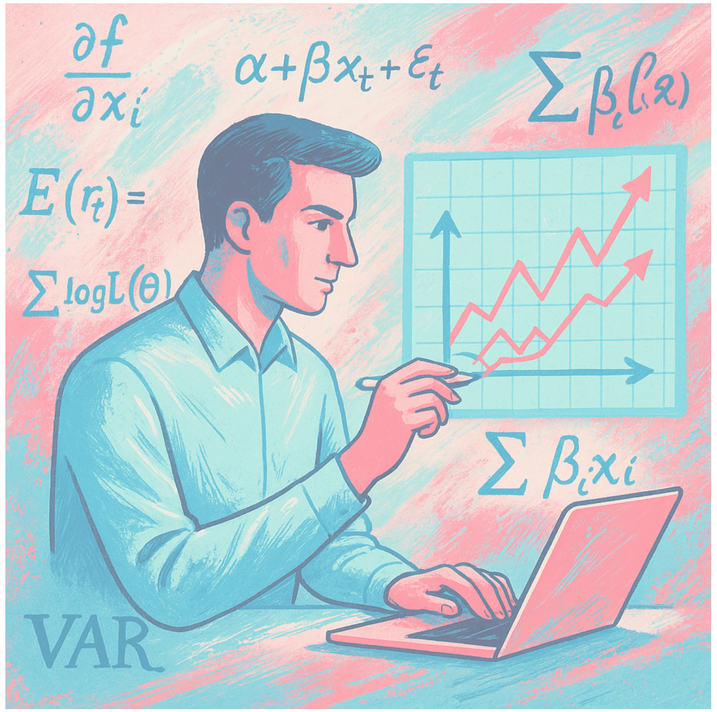


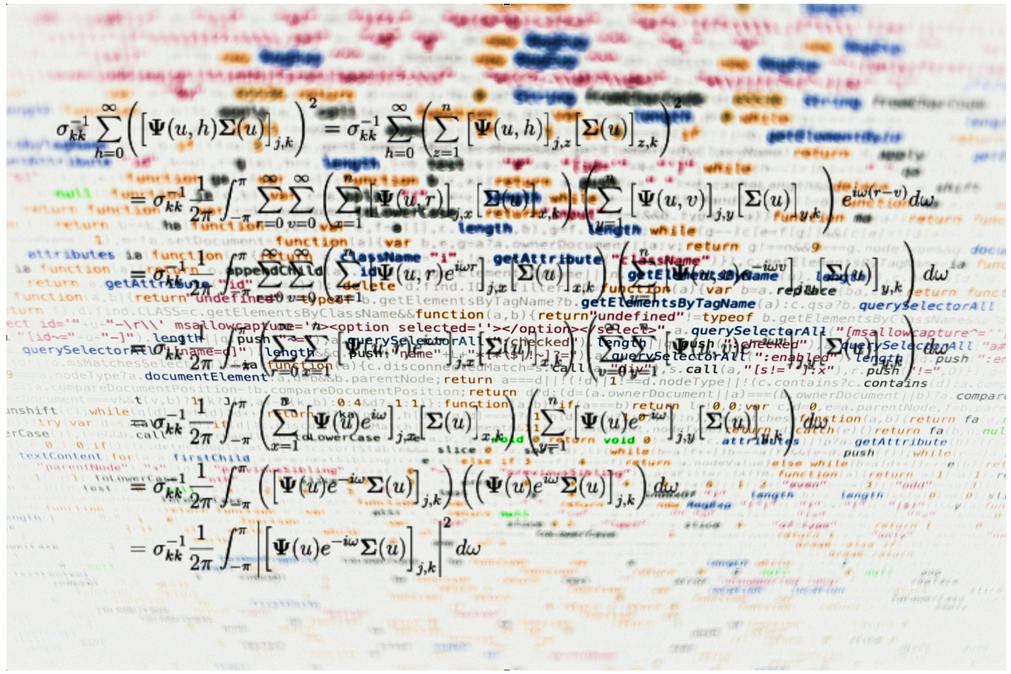
The art & science of using data, mathematics, and statistics

to understand (and forecast) how economies work.

Key aim: Turn real-world data into evidence for decision-making.

We deliver

rigorous, relevant tools
that advances our field
and helps institutions make better decisions.



Why it matters?

Supports better economic policies.

Helps businesses and governments navigate uncertainty.

Provides early warning signals for crises and transitions.

Who we are — at a glance

A compact, high-performing team

Wide international reach

We combine econometrics, applied statistics and machine learning to understand complex economic & financial systems.

Outputs span top journals, tools, and policy collaborations

Artificial Intelligence	Machine learning
Data processing	Computer science
Big data	Advanced statistics
Information	Mathematics

Econometrics and UTIA?

Department fits well into the structure of the institute and its unique environment

We analyse economic phenomena with help of mathematics, statistics and computer science

We use interdisciplinary tools to solve economic problems

ML/AI has increasingly significant impact on Economics

London School of Economics
Bank of England
Imperial College
King's College
Lancaster University

Liverpool University
Sussex University
Humboldt University, Berlin
University in Dortmund
University in Bochum

Team snapshot & scope

Collaborations: major national + number international partners, strong policy links

Conferences organisation with invited top researchers:

Victor Chernozhukov (MIT), Oliver Linton (University of Cambridge), Bryan Graham (UC Berkley), Hasem Pesaran (University of Cambridge), Qiwei Yao (LSE), Antonio Galvao (Arizona), Holger Dette (Bochum), Markus Pelger (Stanford), Svetlava Bryzgalova (LBS)

Number of Grant Projects, i.e. EUR 2M EXPRO

Outputs 2020–2024

Clear focus towards high quality and excellence

≈90 journal articles over 5 years, major portion from Q1+

Review of Economics & Statistics, JAE, JFE, Energy Economics

Number of most cited papers

Plus proceedings, software, reports for reproducibility

Flagship contributions

Dynamic networks & systemic risk

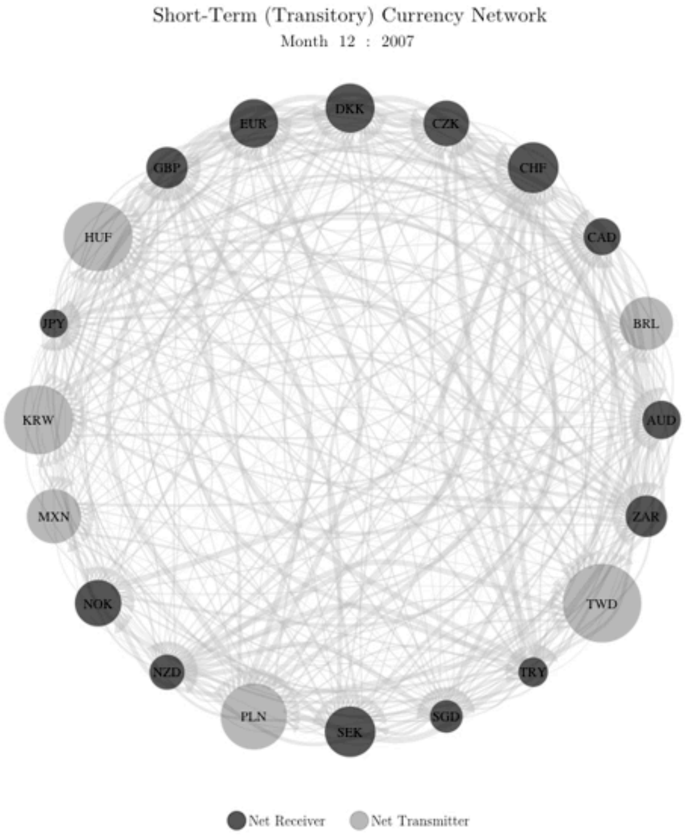
Distributional modeling & uncertainty (beyond means & variances)

Persistence & structural change in time series

Asset pricing in the tails

Data-driven methods (deep/reinforcement learning) for decision problems

Networks of fear
Impact of financial markets on real economy



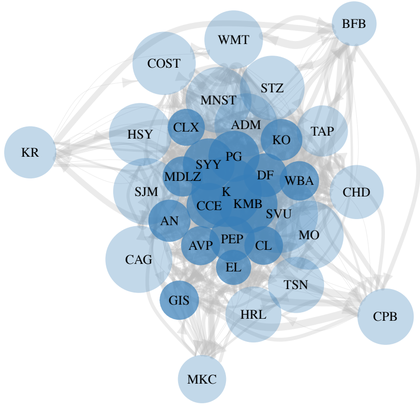
How shocks to expectations in financial markets impact economy?

Review of Economics and Statistics (one of the most prestigious journals in Economics)

New currency risk

New measures of dynamic networks based on shock transmission

Number of top cited papers in top field journals



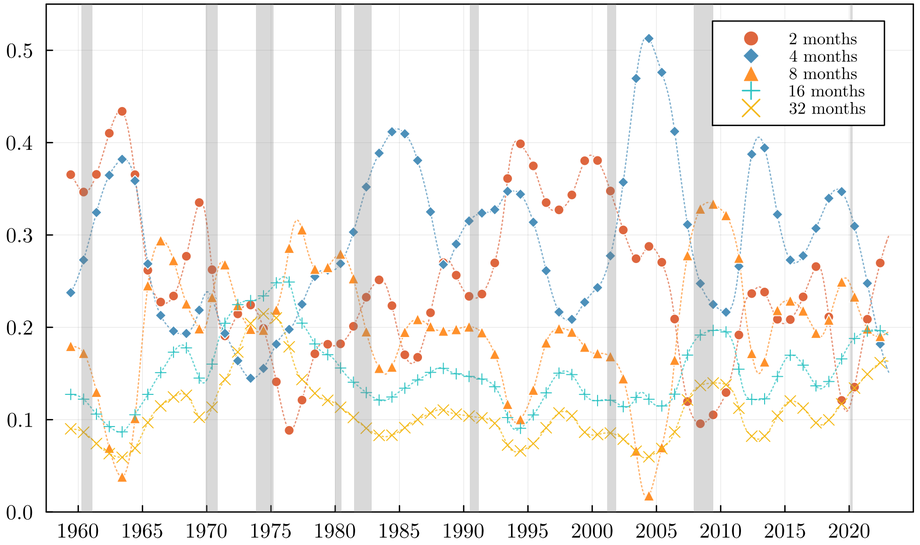
Market power on funding markets

Repo markets: major for economy

Unique data from Bank of England

New methods of measurement

Uncovered new patters about behavior of dealers => international invitations and impact

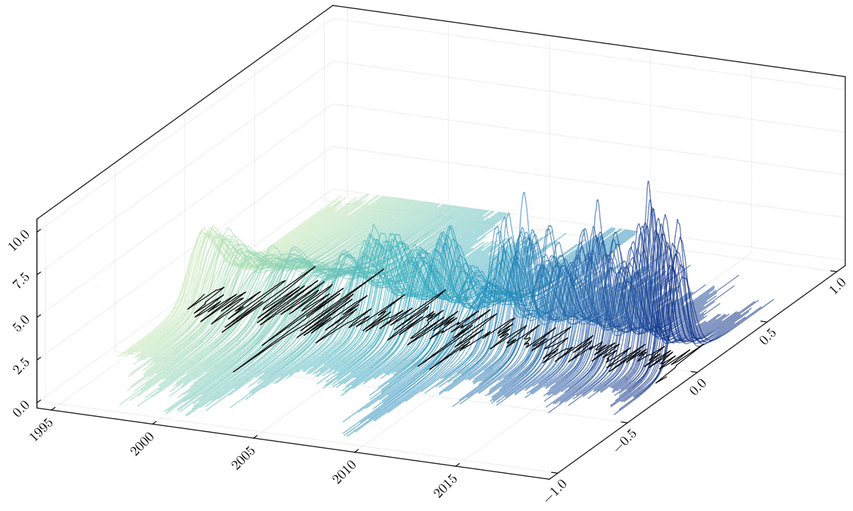


Dynamic persistence & structural change

Stable versus unstable states of economy => heterogeneous shocks

New fundamental method for measurement

Review of Economics and Statistics (Top Econ, Harvard, MIT)



Learning the uncertainty and tail risks

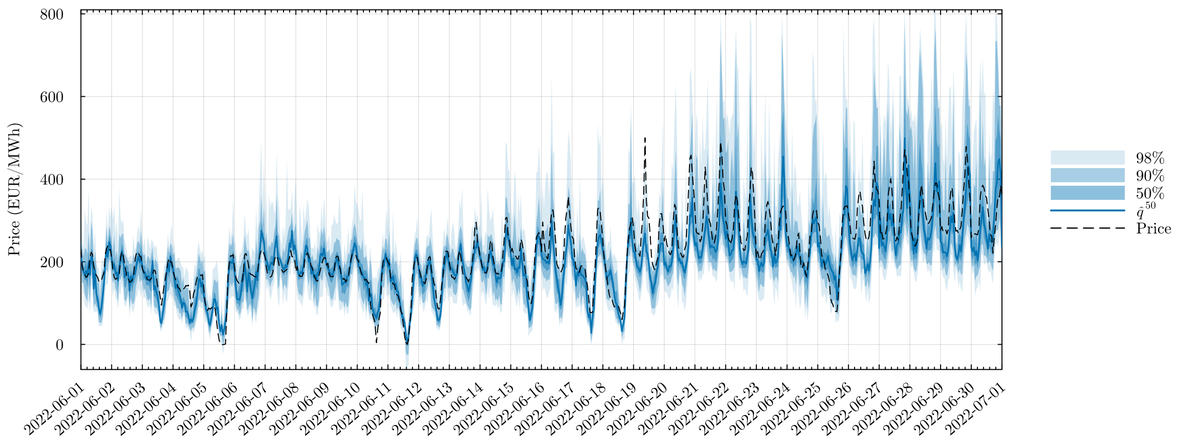
Tail risks in asset pricing

Electricity prices uncertainty

Dynamic probability

New distributional neural networks

top field outlets (Energy Economics, International of Forecasting)



Societal relevance

Leading in Czech with wide international impact

Policy uptake: central banks, regulators, Czech National Bank, Bank of England

COVID schools model informed Czech Ministry of Education (2021)

Community service & leadership

Service on ERC/GACR panels (leaders of panels), editorial boards

Organized international events and workshops (Satistics of Machine Learning series)

Awards and frequent invited talks + top venues (WFA, EFA, SoFiE)

EUR 2M EXPRO grant + many others

Most cited research papers in Financial Econometrics

Successful PhD students

Strengths & where we aim higher

(+) We are small department focused on fundamental research with impact

(+) Clear shift towards quality

(-) Main portion of the funding is from short-term research projects = large fluctuation of part time researchers

(-) problematic long-term strategic planning in terms of stable positions

(+) Strong recognition and service

Future: more interdisciplinary links, expand capacity, knowledge transfer

Looking ahead (3–5 years)

Focus on excellence and outputs in Top journals, attract funds

Methodology: deep reinforcement learning, scalable distributional learning

Applications: financial stability, energy transition risks, macro nowcasting

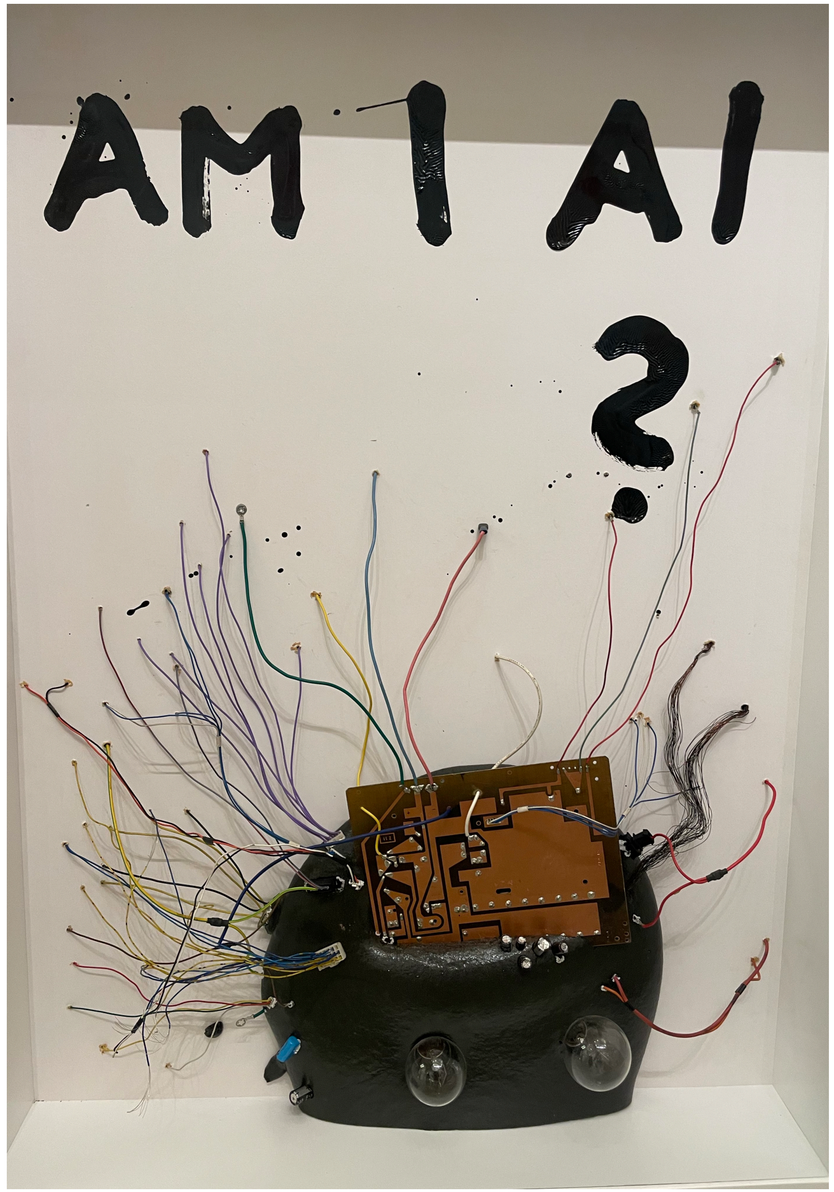
Engagement: structured partnerships, open tools, top publications

New large bilateral project with Duisburg-Essen 2026-2028 on Energy

Main trends

- Integration of theory and empirics
- Causality

- Big Data
- Machine Learning
- Artificial Intelligence
- Computer Science



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Thank you

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