ECONOMIC AI

Empowering Decision-Making with Data & (Causal) AI

Trainings for Data Scientists & Top Management

Trainings Program 2025

Outline

01 Why Causal AI is Essential?

02 Who We Are

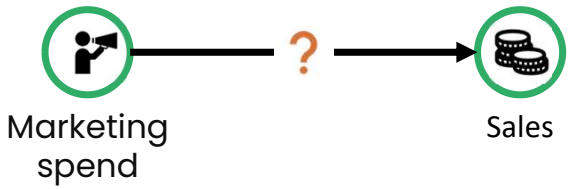
03 Trainings at Economic AI - Overview

04 Feedback from Participants

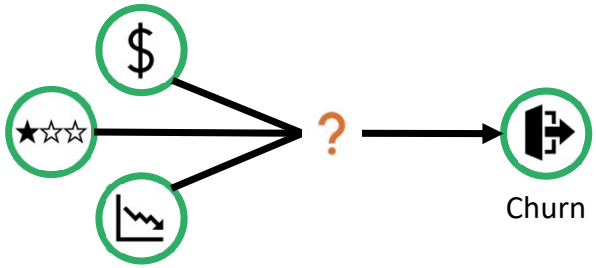
Outline

Fundamental to Every Strategy is to Ask Questions

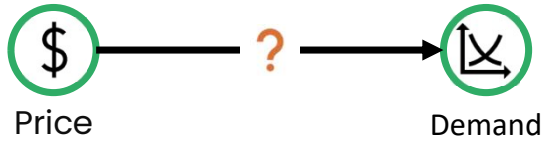
How does **marketing** spending drive **sales**? What's an optimal **resource allocation**?



What factors **contribute** to customer **retention**? Which actions can be taken to **minimize** customer **churn**?



How to **optimize** the **pricing strategy**?



Causal insights reveal the true drivers behind these outcomes, guiding better decisions

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The Issue with Experiments

Experiments can answer causal questions but are often:

 **Costly!**

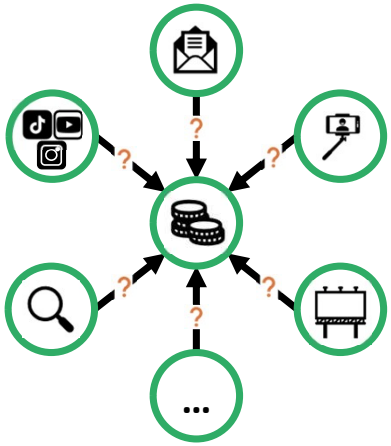
 **Unethical!**

 **Impractical!**

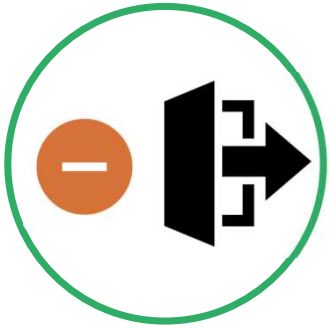
Causal AI offers advanced methods beyond simple A/B tests to answer complex business questions

Practical Applications of Causal AI

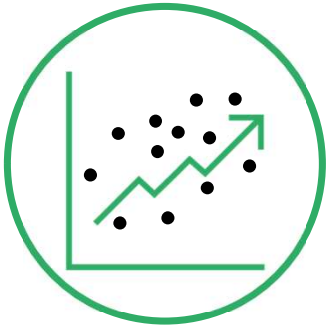
Marketing Mix Modeling
Understand the precise impact of each marketing channel



Customer Churn Analysis
Identify actions that reduce churn and optimize retention policies



Financial Forecasting & Planning
Predict outcomes based on causal factors, not just correlations



Outline

Who We Are

Prof. Dr. Martin Spindler

Professor of Statistics and Machine Learning at University of Hamburg

Cofounder of Economic AI

Fields of interest: Machine Learning (focus on Causal Machine Learning)

Ph.D. from Ludwig Maximilians University Munich

Applications in Finance, Marketing, Ecommerce, Pricing, A/B Testing

Founder and **Director** of Economic AI

Prof. Victor Chernozhukov, PhD

International Ford Professor at MIT, Department of Economics

Cofounder of Economic AI

Fields of interest: Econometrics and Statistics

Ph.D. from Stanford University

Member of the American Academy of Arts and Sciences (2016)

Bessel Award of the Humboldt Foundation (2017)

Extensive Consulting Work with **Amazon** (2018-2020), State Street Corporation, Microsoft Research Lab NE

Dr. Philipp Bach

Head of Trainings at Economic AI

Fields of interest: Causal Inference, Machine Learning

Ph.D. from University of Hamburg

Applications: pricing, marketing, resource allocation, decision analysis

Economic AI – Bridging Industry & Excellence in AI Research

Economic AI was founded by **leading researchers** in (Causal) AI & ML

We provide **data-driven solutions** based on **state-of-the-art research**

Utilizing **newest research** for **competitive advantages** and **innovations**

Proven track of record with **1000+** successful participants

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Our Clients are Major Players from Various Industries

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A Selection of our Past Trainings – Customized Courses for Leading Companies

NOVARTIS	Digital Modeling Core Course (> 500 participants), Courses on Advanced Topics
SAP	AI for Management
MOIA	Causal Inference Training
Booking.com	Causal Machine Learning
ifood	Causal Machine Learning

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Causal Inference Training with MOIA

Our Trainings and Talks

Dr. Heinrich Kögel • 1.
Data Science & Economics
1 Monat •

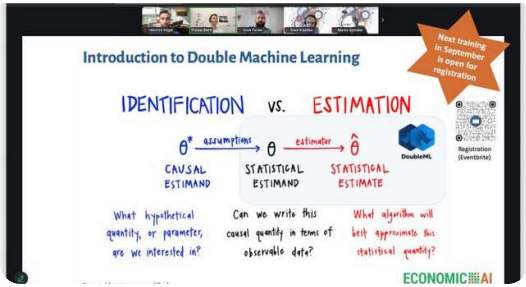
🚀 Excited to share that we just finished our two-day training on "Causal Machine Learning with DoubleML" with the fantastic team at iFood!

A big thank you to Erick Farias and the entire iFood team for your enthusiastic participation and making these sessions so interactive and engaging! 🌟

Our team from Economic AI - Martin Spindler, Philipp Bach, Sven Klaassen, and myself – greatly enjoyed guiding the sessions, covering everything from the basics of causal inference to advanced causal machine learning topics like sensitivity analysis and heterogeneous treatment effects.

We're inspired by the commitment to learning and growth shown by everyone involved and truly appreciate your dedication.

#CausalInference #DoubleML #CausalAI #HeterogeneousTreatmentEffects #Sensi

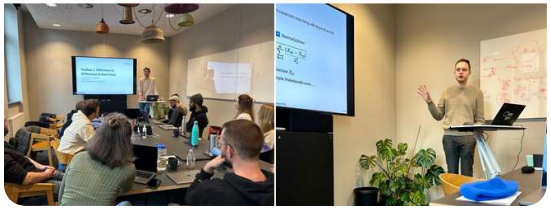


Maximilian Busch (he/him) • 1.
Chapter Lead and Senior Data Scientist for Pricing @ MOIA
4 Monate •

Beginning of April we had a two-day training from Economic AI on the topic of causal inference for our data scientists and analysts at MOIA. A big thank you to Martin Spindler, Philipp Bach and Sven Klaassen who gave the training and did a tremendous job in covering a wide array of topics around causality and causal inference.

The two days were packed with ideas and tools for ...
... how to communicate and visualise hypotheses
... how to estimate effect sizes
... where classical statistics tools suffice
... when and why to use more advanced techniques like DoubleML

All in all two days well spent getting more comfortable with the topic of causality and enabling our data community!

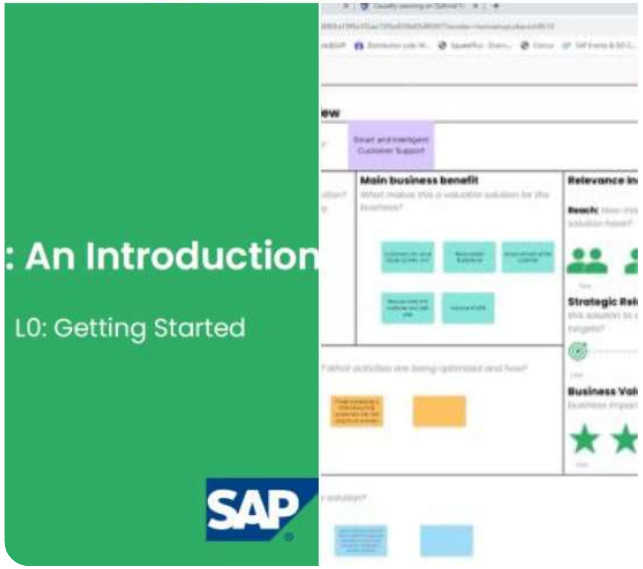


Martin Spindler • Sie
Professor for Data Science, Statistics and Econometrics, Director at Economic AI
4 Monate • Bearbeitet •

Today we are concluding DMC 6.1 at Novartis, one week of intense learning on Digitalization, (Genearative) AI, Machine Learning, and Causality. Pushing the frontier of #datascience and #digitalfinance at Novartis further.
Thanks to Victor Bultó and John McKenna for enriching the course with management insights and for the open discussions!
Thanks to all participants for their dedication and engagement!
#datascience #digitalfirst #finance #marketing #supplychain #commercial #ai #ma
PS: For the training programme of Economic AI check out the website: www.economicai.com

Martin Spindler • Sie
Professor for Data Science, Statistics and Econometrics, Director at Economic AI
8 Monate •

Last Friday and Monday the first edition of our short course "AI: An Introduction" was held at SAP. The goal is to prepare the participants to understand this technology and enable them to develop AI related ideas and evaluate them. Topics covered were AI for prediction, Generative AI, AI for causal inference and AI Ethics & Regulation. Highlight was the ideation workshop where the participants developed a Data Science / AI business idea. The developed ideas were really amazing. Thanks for their great dedication. The participants are well prepared for the 2024 AI year :-)
Thanks to Nicole Helmer, Zsuzsanna Polgár, Anderson Santana de Oliveira and Hanna M. making it possible and organizing everything so excellent and flexible.
#ai #machinelearning #upskilling #trainings #sap #economicai Economic AI



ECONOMIC AI

Our Approach

Trainings & Labs

Half- to five-day trainings

From **high-level** courses for top-management to **research-based** methods for data scientists

Tailormade courses adapting to challenges in use cases and industry

Workshops

Interactive workshops to discussing use cases and creating solution strategies

Keynote speeches

(Short) presentations at **company events**

Design & Inhouse Trainings

Development of curricula & programs for **AI literacy, data literacy & data science**

Consulting on **inhouse training programs**

ECONOMIC AI

Leading researchers in Data Science, Statistics & Machine Learning, in particular Causal Machine Learning

Teaching experience at top universities and MBA programs around the world (MIT, Hong Kong University, Universität Hamburg)

Unique curricula, covering cutting edge research and methods

“Interactive Labs”

Curricula combine state-of-the-art methods with a practical hands-on focus that is relevant in business

Teaching experience at major multinational corporations

Outline

Overview – Courses for Management, Executives and Board Members

AI and Machine Learning for Top-Management

About the course:

A High-level introduction to AI and Machine Learning

Individual trainings and briefings are available upon request

Audience:

Top-Management

Duration:

½ - 1 day

Causality for Better Decision Making

About the course:

Introduction to Causal Inference for Managers

Audience:

Management

Duration:

½ - 1 day

Data Analytics & Artificial Intelligence for Managers

About the course:

High-level introduction to Data Analytics & Artificial Intelligence

Audience:

Management

Duration:

1 day

Impact Evaluation for Managers

About the course:

Introduction for managers to impact evaluation

Audience:

Management

Duration:

1 day

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Causality for Better Decision Making

Causal Inference for Better Business Decisions

Beginner-Level

About the course:

Introduction for managers to the concept of **causality** to improve business decision- making

Overview of key use cases where causality is crucial

"Speaking causality" in business problems

Highlights **common pitfalls** of standard data-driven techniques

Identify misleading insights and avoid errors

What you will learn:

- **Key concepts of causality:** Understanding why causality is essential for effective business decisions
- **Key Use Cases:** Explore scenarios where understanding causality drives better outcomes
- **Causal Inference Methods:** Gain a high-level overview of techniques for identifying causal relationships
- **Recognizing Pitfalls:** Identify when correlation-based approaches can be misleading and how to avoid common mistakes

Setting:

½ - 1 day	Up to 20 participants	Available for remote or on-site sessions

Skills you will acquire:

- Causal Reasoning
- Avoidance of Causal Errors
- Understanding Causal Inference Methods
- Strategic Thinking with Data

Overview – Courses for Data Scientists & Analysts (technical)

Digital Modelling Core Course

About the course:

Training of Business Analysts in Machine Learning

Audience:

Business Analysts

Duration:

5 days

Causal Inference

About the course:

Introduction to Causal Inference for Data Scientists and Analysts (Introductory level)

Audience:

Data Scientists and Business Analysts

Duration:

2-4 days

Causal Machine Learning

About the course:

Training of Data Scientists in state-of-the-art methods of Causal Machine Learning (Advanced)

Audience:

Data Scientists

Duration:

2-4 days

Optimization

About the course:

State-of-the-art optimization methods for Data Scientists

Audience:

Data Scientists

Duration:

1 day

More topics and courses available upon request

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Digital Modelling Core Course

AI for Financial Analysts and Planners & Marketing Analysts

Beginner-Level

About the course:

5-day course for **non-technical** corporate finance professionals

Covers fundamental AI concepts and **AI-based forecasting**

Equips participants to **collaborate effectively with data scientists**

Theoretical sessions establish a solid **foundation in core AI methods**

Practical sessions showcase **interactive applications through live coding**

What you will learn:

- **Core AI Techniques:** Gain insights into AI methods essential for business decision-making
- **Hands-On Practice:** Apply concepts in a practical sales forecasting case study, no coding experience needed
- **AI Models & Coding:** Understand how AI models are built and how coding works, no coding experience needed
- **Model Interpretation:** Learn to interpret the outputs from AI models
- **Collaborative Skills:** Develop the skills to work confidently with data scientists as a knowledgeable business partner.

Setting:

5 days	Up to 25 participants, with a maximum of 5 per group in labs	Available for remote or on-site sessions

Skills you will acquire:

- Understanding AI Fundamentals
- Application Machine Learning
- AI-Based Forecasting
- Collaborative Skills

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Duration:

2-4 days

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About the course:

State-of-the-art optimization methods for Data Scientists

Audience:

Data Scientists

Duration:

1 day

More topics and courses available upon request

ECONOMIC AI

Causal Machine Learning

Causal AI with DoubleML

Advanced-Level

About the course:

State-of-the-art training in Causal Machine Learning

The course provides **comprehensive theoretical foundation**

Practical sessions on **real-world applications**

Learn to **identify when Causal Machine Learning is valuable**

Hands-on skills for **effective implementation**

What you will learn:

- **Causality Fundamentals:** Understand the importance of causality in business decision-making
- **Practical Use Cases:** Identify situations where causality insights drive better outcomes
- **Causal Inference Methods:** Gain an overview of key techniques for determining causal relationships
- **Avoiding Misleading Insights:** Learn to recognize when correlation-based methods fall short and common pitfalls to avoid

Setting:

2-4 days	Up to 15 participants	Available for remote or on-site sessions

Skills you will acquire:

- Application of Causal Inference
- Implementation of Causal Machine Learning
- Research-Based Approach to Causal Machine Learning

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Outline

Selection of Comments from our Participants

★★★★★

"This program was a great inspiration to understand how we can include data science further in our organization."

"I liked the course very much. Perfect combination of theory and practice."

"I will highly recommend the course to any colleague that is involved in either financial planning and/or sales forecasting."

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“The labs were a great way to put the concepts from the lectures into action and learn in a "real life" scenario environment.”

“It gave me great appreciation for what our data scientist do. I felt the course instructors did a great job providing examples and details to help explain certain concepts.”

“Great program, great presenters and lab partners. Lots of fun and learning.”

Thank you very much for your attention

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Dr. Philipp Bach

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Head of Trainings & Executive Education

ECONOMIC AI

ECONOMETRIC CONSULTING AND SOLUTIONS FOR THE BIG DATA AGE

BOSTON – HAMBURG – HONG KONG – MINICH

www.economicai.com