Prof. Stefan Lessmann



Faculty of Economics and Business Administration

Chair of Information Systems

Expertise

Professor Lessmann's research focuses on machine learning and artificial intelligence (MLAI) methodologies and their use cases in managerial decision support. Areas of interest include but are not limited to explainable AI, causal/interpretable machine learning, natural language processing, predictive analytics and time series forecasting.

He is specialized in MLAI applications in the broad scope of marketing and risk analytics. He is also actively involved in knowledge transfer, professional education and consulting projects with industry partners ranging from start-ups to global players and non-profit organizations.

http://humboldt.gmbh/forschungskooperation

Scientific Services

- Prototyping, evaluation, and benchmarking of ML/AI-based prediction and decision models
- Development of PD, LGD, and EAD forecasting models
- Processing of textual data for knowledge extraction
- Assessment of the information value of commercially available data sources (e.g., credit bureau data) for predictive modeling
- Estimation of personalized, individual-level treatment effects
- Professional education in ML/AI, data science and business analytics

Testimonials

FinTech - Based on concepts of Bayesian statistics and semi-supervised machine learning, Professor Lessmann and his team have developed a system to solve the problem of inference rejection in the lending industry. Their solutions provide significantly better risk scorecards and make it easier for lenders to predict the predictive power of a scorecard (e.g., the PD) in operation. The project was conducted with a leader in the microcredit space.

E-commerce - Together with WebTrekk and Uebermetrics, Lessmanns working group is developing an AI-driven web controlling system that examines web metric time series (page views, visits, bounce rates, checkouts, sales, etc.) and identifies the causes of observed patterns (e.g., anomalies). To this end, their system integrates deep causal detection algorithms based on reinforced learning and xAI methods. To extend the scope of their root cause explanations, they also monitor various social media streams and use advanced NLP algorithms for event detection. The unique combination of these AI concepts provides web controllers and store managers with advanced insights into their business operations.

Digital marketing - Lessman and his team have developed advanced causal machine learning models for real-time targeting of e-coupons and other digital marketing stimuli. Their optimal (i.e., profit-maximizing) methodology includes both single and multiple treatment scenarios and leverages traditional supervised learning algorithms to enable cost-effective deployment.

Continuing Education

Professor Lessmann has taught a number of professional education courses in subject areas such as credit risk modeling, fraud detection, advanced analytics, and machine learning, to name a few. Some of these courses are offered as part of the SAS Business Knowledge Series, but are also available on the R and Python platforms. Requests for professional development in the areas of his expertise are welcome.

Topics / Trends

Credit Scoring
Fraud Detection
Machine Learning
Natural language processing
Big Data & Data Management
Financial Technology (FinTech)
Risk Assessment

Industries

Finance, Insurance & Property
Consumer Goods & (Online) Retail
Mobility & Logistics

Mentor for Startup

Creatext
INHUBBER UG (haftungsbeschränkt)
Sentientic GmbH
TripLegend

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Förderung

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