

David Strieder

DOCTORAL RESEARCHER · MATHEMATICAL STATISTICS

Technical University of Munich, Boltzmannstr. 3, 85748 Garching b. München, Germany

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Education

Technical University of Munich

DR. RER. NAT. IN MATHEMATICS

- Advisor: Mathias Drton
- Working Title: Uncertainty Quantification in Causal Inference
- Part of Mathematical Statistics Research Group
- Part of Munich Center for Machine Learning (MCML)
- Part of ERC project Graphical Models for Complex Multivariate Data

Munich
2020 - present

Karlsruhe Institute of Technology

M. SC. IN MATHEMATICS

- Major: Stochastics
- Advisor: Norbert Henze, Bruno Ebner
- Thesis: New tests of multivariate normality based on the gradient of the characteristic function

Karlsruhe
2018 - 2020

Karlsruhe Institute of Technology

B. SC. IN MATHEMATICS

- Major: Stochastics
- Advisor: Bernhard Klar
- Thesis: Limit theorems for discrete-time stochastic processes

Karlsruhe
2014 - 2018

Publications and Preprints

- D. Strieder and M. Drton. *Confidence in causal inference under structure uncertainty in linear causal models with equal variances*. Journal of Causal Inference, 11(1), 0030, 2023.
- M. Drton, H. Shi and D. Strieder. *Discussion of “A note on universal inference” by Timmy Tse and Anthony Davison*. Stat, 12(1), e574, 2023.
- G. Keropyan, D. Strieder and M. Drton. *Rank-Based Causal Discovery for Post-Nonlinear Models*. Proceedings of The 26th International Conference on Artificial Intelligence and Statistics, PMLR 206:7849-7870, 2023.
- D. Strieder and M. Drton. *On the choice of the splitting ratio for the split likelihood ratio test*. Electronic Journal of Statistics, 16(2), 6631-6650, 2022.
- B. Ebner, N. Henze and D. Strieder. *Testing normality in any dimension by Fourier methods in a multivariate Stein equation*. Canadian Journal of Statistics, 50: 992-1033, 2022.
- D. Strieder, T. Freidling, S. Haffner and M. Drton. *Confidence in Causal Discovery with Linear Causal Models*. Proceedings of the Thirty-Seventh Conference on Uncertainty in Artificial Intelligence, PMLR 161:1217-1226, 2021.

Conference Talks and Presentations

2023. IMS International Conference on Statistics and Data Science, Lisbon, Portugal.
Talk on *Confidence in Causal inference under Structure Uncertainty*.
2023. 18th Meeting of PhD Students in Stochastics, Heidelberg, Germany.
Talk on *Confidence in Causal inference under Structure Uncertainty*.
2023. 26th International Conference on Artificial Intelligence and Statistics (AISTATS), Valencia, Spain.
Poster presentation on *Rank-Based Causal Discovery for Post-Nonlinear Models*.
2022. IMS International Conference on Statistics and Data Science, Florence, Italy.
Poster presentation on *Confidence in Causal Discovery with Linear Causal Models*.

2022. ETH-UCPH-TUM Workshop on Graphical Models, Raitenhaslach, Germany.
Talk on *Confidence in Causal Discovery with Linear Causal Models*.
2022. 17th Meeting of PhD Students in Stochastics, Klagenfurt, Austria.
Talk on *Confidence in Causal Discovery with Linear Causal Models*.
2021. 37th Conference on Uncertainty in Artificial Intelligence (UAI), Online.
Talk and Poster presentation on *Confidence in Causal Discovery with Linear Causal Models*.

Other Talks and Activities

2023. TUM Certificate Program Data Science.
2023. 2nd ASCAI Workshop (Active and batch Segmentation, Clustering, and seriation: toward unified foundations in AI.)
Talk on *Confidence in Causal Discovery with Linear Causal Models*.
2022. Munich Data Science Institute (MDSI) General Assembly.
Poster presentation on *Confidence in Causal Discovery with Linear Causal Models*.
2022. Virtual Pitch Talks of the German AI network about Learning on Graphs and Networks.
Talk on *Confidence in Causal Discovery with Linear Causal Models*.
2021. AALTO-ICL-TUM Meeting on Algebraic Methods in Data Science.
Talk on *Confidence in Causal Discovery with Linear Causal Models*.

Teaching Experience

TEACHING ASSISTANT

- WS 2021/22 **Seminar: Nonlinear Methods in Causal Inference**, Teaching Assistant
- SS 2021 **TUM Data Innovation Lab: A robust comparison of causal effects from observational data in healthcare**, Project Mentor
- WS 2020/21 **Lecture: Generalized Linear Models**, Teaching Assistant

THESIS SUPERVISOR

- SS 2023 **Regularized Rank Regression for Transformation Models**, Masters Thesis
- WS 2022/23 **Credible Intervals for Causal Effects in Linear Causal Models**, Masters Thesis
- WS 2022/23 **Confidence in Causal Inference from Interventional Data**, Masters Thesis
- SS 2022 **Active Bayesian Causal Discovery for Gaussian Process Networks**, Masters Thesis
- SS 2022 **Post-Nonlinear Gaussian Causal Models**, Masters Thesis
- SS 2021 **Bivariate Causal Discovery with non-linear Models**, Bachelors Thesis
- WS 2020/21 **Two Likelihood-Ratio Based Approaches for Estimating the Causal Effect in Linear Structural Equation Models**, Masters Thesis

Other Professional Experience

- 2021-2023 **Program Committee**, Conference on Uncertainty in Artificial Intelligence
- 2021 **Program Committee**, Workshop on Causal Inference, International Conference on Machine Learning