David Strieder

Doctoral Researcher · Mathematical Statistics

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

david.strieder@tum.de

Education

Technical University of Munich *Munich*

Dr. rer. nat. in Mathematics *2020 - present*

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

Karlsruhe Institute of Technology *Karlsruhe*

M. Sc. in Mathematics *2018 - 2020*

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

Karlsruhe Institute of Technology *Karlsruhe*

B. Sc. in Mathematics *2014 - 2018*

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

Publications and Preprints

D. Strieder and M. Drton. *Identifying Total Causal Effects in Linear Models under Partial Homoscedasticity*. Proceedings of the 12th International Conference on Probabilistic Graphical Models, PMLR 246:213-230, 2024.

D. Strieder and M. Drton. *Dual Likelihood for Causal Inference under Structure Uncertainty*. Proceedings of the Third Conference on Causal Learning and Reasoning, PMLR 236:1-17, 2024.

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

2024. Conference on Probabilistic Graphical Models (PGM), Nijmegen, the Netherlands.
Talk on *Identifying Total Causal Effects in Linear Models under Partial Homoscedasticity*.

2024. Bernoulli-IMS 11th World Congress in Probability and Statistics, Bochum, Germany.
Talk on *Confidence in Causal Inference under Structure Uncertainty*.

2024. European Causal Inference Meeting (EuroCIM), Copenhagen, Denmark.
Talk on *Confidence in Causal Inference under Structure Uncertainty*.

2024. 3rd Conference on Causal Learning and Reasoning (CLeaR), Los Angeles, California.
Talk and Poster presentation on *Dual Likelihood for Causal Inference under Structure Uncertainty*.

2023. IMS International Conference on Statistics and Data Science (ICSDS), Lisbon, Portugal.
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 (ICSDS), Florence, Italy.
Poster presentation 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

2024. Workshop on Uncertainty in Machine Learning, Munich, Germany.
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. TUM Certificate Program Data Science, Munich, Germany.
Successfully completed the TUM Executive & Professional Education Certificate Program Data Science.

2023. Workshop on Batch Segmentation, Clustering, and Seriation: Toward Unified Foundations in AI, Munich, 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*.

2022. ETH-UCPH-TUM Workshop on Graphical Models, Raitenhaslach, Germany.
Talk on *Confidence in Causal Discovery with Linear Causal Models*.

2021. AALTO-ICL-TUM Meeting on Algebraic Methods in Data Science, Munich, Germany.
Talk on *Confidence in Causal Discovery with Linear Causal Models*.

Teaching Experience

Teaching assistant

WS 2021/22	**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	**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	**Confindence 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	**Bivaraite 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

2021-2024 **Program Committee**, Conference on Uncertainty in Artificial Intelligence (UAI)

2021 **Program Committee**, Workshop on Causal Inference at International Conference on Machine Learning (ICML)