

# Marcel Wienöbst

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## Education

- 2024-today **PostDoc**, *Institute for Theoretical Computer Science, University of Lübeck*
- 2019-2024 **Ph.D. Computer Science**, *Institute for Theoretical Computer Science, University of Lübeck*  
Title: Algorithms for Markov Equivalence. Advisor: Maciej Liśkiewicz.
- 2016-2019 **M.Sc. Computer Science**, *University of Lübeck*, Final Grade 1.0 (4.0 GPA)  
Thesis: Constraint-based causal structure learning exploiting low-order conditional independencies.  
Advisor: Maciej Liśkiewicz.
- 2013-2016 **B.Sc. Computer Science**, *University of Lübeck*, Final Grade 1.4 (3.6 GPA)  
Thesis: Experimental Evaluation of Algorithms for the Bisection Problem in Graphs. Advisors: Martin Schuster und Maciej Liśkiewicz.
- 2013 **Abitur (General Higher Qualification for University Entrance)**, *KGS Salzhemmendorf*,  
Final Grade 1.0 (4.0 GPA)

## Employment

- 08/2019-  
today **Research Associate**, *Institute for Theoretical Computer Science, University of Lübeck*
- between  
2015 & 2019 **Tutor and Research Assistant**, *University of Lübeck*  
Among other occupations working in the DFG project *Causality: an algorithmic framework and a computational complexity perspective* led by Maciej Liśkiewicz.

## Awards

- AI Newcomer 2023** (awarded by the German Informatics Society).
- Best Student Paper Award (UAI 2022)** for the paper *A New Constructive Criterion for Markov Equivalence of MAGs*.
- Best Student Paper Award (UAI 2021)** for the paper *Extendability of Causal Graphical Models: Algorithms and Computational Complexity*.
- Distinguished Paper Award (AAAI 2021)** for the paper *Polynomial-Time Algorithms for Counting and Sampling Markov Equivalent DAGs*.
- Top Reviewer Award (UAI 2022)**
- Best Master Award 2018/2019** awarded to the students with the best Master grade in Computer Science between 07/2018 and 12/2019 at University of Lübeck.

## Extracurricular Activities

- 2019- **Coach and organizer of the ICPC programming contests in Lübeck**, *University of Lübeck*  
In addition, jury member at the Wintercontest 2020, 2022 and 2023 as well as the GCPC 2022 and 2023.
- 2015-2019 **Participant in the ICPC programming contests**, *University of Lübeck*  
Among other results a 9th place (bronze medal) at GCPC 2018 and 28th place at NWERC 2017.

## Bibliography

Marcel Wienöbst, Max Bannach, Maciej Liskiewicz (2023). **Polynomial-Time Algorithms for Counting and Sampling Markov Equivalent DAGs with Applications**, *Journal of Machine Learning Research (JMLR)*, Volume 24.

Malte Luttermann, Marcel Wienöbst, Maciej Liśkiewicz (2023). **Practical Algorithms for Orientations of Partially Directed Graphical Models**, to appear in *Proceedings of the Second Conference on Causal Learning and Reasoning (CLEaR 2023)*.

Marcel Wienöbst, Malte Luttermann, Max Bannach, Maciej Liśkiewicz (2023). **Efficient Enumeration of Markov Equivalent DAGs**, to appear in *Proceedings of the Thirty-Seventh AAAI Conference on Artificial Intelligence (AAAI 2023)*.

Marcel Wienöbst, Max Bannach, Maciej Liskiewicz (2022). **A New Constructive Criterion for Markov Equivalence of MAGs**, *Proceedings of the Thirtieth-Eighth Conference on Uncertainty in Artificial Intelligence (UAI 2022)*. **Best Student Paper**.

Benito van der Zander, Marcel Wienöbst, Markus Bläser, Maciej Liśkiewicz (2022). **Identification in Tree-Shaped Linear Structural Causal Models**, *Proceedings of the Twenty-Fifth Conference on Artificial Intelligence and Statistics (AISTATS 2022)*.

Marcel Wienöbst, Maciej Liśkiewicz (2021). **An Approach to Reduce the Number of Conditional Independence Tests in the PC Algorithm**, *Proceedings of the Forty-Fourth German Conference on AI (KI 2021)*.

Marcel Wienöbst, Max Bannach, Maciej Liśkiewicz (2021). **Extendability of Causal Graphical Models: Algorithms and Computational Complexity**, *Proceedings of the Thirty-Seventh Conference on Uncertainty in Artificial Intelligence (UAI 2021)*. **Best Student Paper**.

Marcel Wienöbst, Max Bannach, Maciej Liśkiewicz (2021). **Polynomial-Time Algorithms for Counting and Sampling Markov Equivalent DAGs**, *Proceedings of the Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI 2021)*. **Distinguished Paper**.

Max Bannach, Sebastian Berndt, Martin Schuster, Marcel Wienöbst (2020). **PACE Solver Description: PID\***, *Proceedings of the 15th International Symposium on Parameterized and Exact Computation (IPEC 2020)*.

Max Bannach, Sebastian Berndt, Martin Schuster, Marcel Wienöbst (2020). **PACE Solver Description: Fluid**, *Proceedings of the 15th International Symposium on Parameterized and Exact Computation (IPEC 2020)*.

Marcel Wienöbst, Maciej Liskiewicz (2020). **Recovering Causal Structures from Low-Order Conditional Independencies**, *Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI 2020)*.