

Christopher Morris

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Nationality: German/British

Areas of Specialization

Machine Learning with Graphs (Graph Kernels, Graph Neural Networks), Machine Learning for Combinatorial Optimization, Graph Algorithms, Algorithm Engineering

Current Position

2015–present *PhD Student/Research Associate*, TU Dortmund University, Dortmund

1–3/2018 *Research stay at Stanford University*, staying with Jure Leskovec

Education

1997–2007 University Entrance Qualification, Erzbischöfliches St.-Angela-Gymnasium, Wipperfurth

2008–2012 B. Sc. in Computer Science, TU Dortmund University

2012–2015 M. Sc. in Computer Science, TU Dortmund University, Final Grade: 1.0 (best possible grade)

Publications

Conference Papers

2019 Christopher Morris, Martin Ritzert, Matthias Fey, William L. Hamilton, Jan Eric Lenssen, Gaurav Rattan, Martin Grohe

Weisfeiler and Leman Go Neural: Higher-order Graph Neural Networks,
AAAI Conference on Artificial Intelligence (AAAI) 2019

2018 Rex Ying, Jiaxuan You, Christopher Morris, Xiang Ren, William L. Hamilton, Jure Leskovec

Hierarchical Graph Representation Learning with Differentiable Pooling,
Neural Information Processing Systems (NeurIPS) 2018, spotlight presentation, and

KDD Deep Learning Day 2018

Nils M. Kriege, Christopher Morris, Anja Rey, Christian Sohler,
A Property Testing Framework for the Theoretical Expressivity of Graph Kernels,
International Joint Conference on Artificial Intelligence (IJCAI) 2018

- 2017** Christopher Morris, Kristian Kersting, Petra Mutzel,
Glocalized Weisfeiler-Lehman Graph Kernels: Global-Local Feature Maps of Graphs,
IEEE International Conference on Data Mining (ICDM) 2017, *Full paper*
- Christopher Morris, Nils M. Kriege,
Recent Advances in Kernel-Based Graph Classification,
European Conference on Machine Learning & Principles and Practice of Knowledge
Discovery in Databases (ECML PKDD) 2017

- 2016** Christopher Morris, Nils M. Kriege, Kristian Kersting, Petra Mutzel,
Faster Kernels for Graphs with Continuous Attributes via Hashing,
IEEE International Conference on Data Mining (ICDM) 2016

Journal Articles

- 2017** Fritz Bökler, Mathias Ehrgott, Christopher Morris, Petra Mutzel,
Output-sensitive Complexity of Multiobjective Combinatorial Optimization,
Journal of Multicriteria Decision Analysis, 2017

Preprints

- 2019** Christopher Morris, Petra Mutzel
Towards a practical k -dimensional Weisfeiler-Leman algorithm
In submission (<https://arxiv.org/abs/1904.01543>)
- 2017** Nils M. Kriege, Marion Neumann, Christopher Morris, Kristian Kersting, Petra Mutzel,
*A Unifying View of Explicit and Implicit Feature Maps for Structured Data: Systematic
Studies of Graph Kernels*,
In submission (<https://arxiv.org/abs/1703.00676>)
- 2019** Nils M. Kriege, Fredrik D. Johansson, Christopher Morris
A Survey on Graph Kernels,
In submission (<https://arxiv.org/abs/1903.11835>)

Teaching

Supervised eight bachelor and master thesis

- WS 2017/18** Seminar *Algorithm Engineering*
- SS 2017** Seminar *Algorithm Engineering*
- WS 2016/17** Student project group *Algorithm Engineering for Graph Data Mining*
Seminar *Algorithms Unplugged*
- SS 2016** Seminar *Algorithm Engineering*
Seminar *Graph Mining*
- WS 2015/16** Seminar *Algorithm Engineering*
- As a student** Programming tutorials for engineering students,
Teaching assistant for a course on theoretical computer science

Service to the Profession

Reviewer for ISAAC 2018, ESA 2018, WALCOM 2017, IJCAI 2019, ACM TKDD
Program committee member for Representation Learning on Graphs and Manifolds
(ICLR 2019 Workshop)
Member of the appeal commission for the professorship “Data Mining” (2017)

Computational Skills

Python, C++, L^AT_EX, Scikit-learn, NumPy, PyTorch

Referees

Prof. Petra Mutzel
Chair of Algorithm Engineering,
Department of Computer Science,
TU Dortmund University
petra.mutzel@udo.edu

Prof. Kristian Kersting
Machine Learning Group,
Department of Computer Science,
TU Darmstadt

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