Matthias Fey

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Education

Ph.D. in Computer Science *(ongoing)* at TU Dortmund University, 📅 *2017 - present*
Dortmund, Germany

- **Topics:** Geometric Deep Learning & Graph Representation Learning
- **Title:** On the Power of Neural Message Passing for Learning on Graph-Structured Data
- **Advisor:** Priv.-Doz. Dr. Frank Weichert
- **Estimated data of completion:** Mai 2022

M.S. in Computer Science at TU Dortmund University, Dortmund, 📅 *2013 - 2017*
Germany

- **Title:** Convolutional Neural Networks auf Graphrepräsentationen von Bildern
- Graduated with distinction

B.S. in Computer Science at TU Dortmund University, Dortmund, 📅 *2010 - 2013*
Germany

- **Title:** Qualitative Semantiken für DAGs – ein Vergleich von OCF- und CP-Netzwerken

Secondary Education (Abitur) at Pestalozzi Gymnasium, Unna, 📅 *2000 - 2009*
Germany

Primary Education at Osterfeldschule, Unna, Germany 📅 *1996 - 2000*

Work Experience

Founding Engineer at kumo.ai, San Francisco, California, USA 📅 *2022 - present*

Research Associate at TU Dortmund University, Dortmund, 📅 *2017 - 2021*
Germany

- **Collaborative Research Center 876, Project A6:** Resource-efficient Graph Mining
- **Teaching Associate:** Mensch-Maschine-Interaktion

Software Engineer at Comline, Dortmund, Germany 📅 *2013 - 2017*

Civilian Service at Katharinen Hospital, Unna, Germany 📅 *2009 - 2010*

Research Visits

Stanford University at SNAP with Jure Leskovec, Stanford, 📅 *Feb 2020 - Mar 2020*
California, USA

Publications

Christopher Morris, Yaron Lipman, Haggai Maron, Bastian Rieck, Nils M. Kriege, Martin Grohe, **Matthias Fey** and Karsten Borgwardt: Weisfeiler and Leman go Machine Learning: The Story so far. In: *CoRR, abs/2112.09992* 📅 *2021*

Matthias Fey, Jan Eric Lenssen, Frank Weichert and Jure Leskovec: GN-NAutoScale: Scalable And Expressive Graph Neural Networks via Historical Embeddings. In: *International Conference on Machine Learning (ICML).* 📅 *2021*

Weihua Hu, **Matthias Fey**, Hongyu Ren, Maho Nakata, Yuxiao Dong and Jure Leskovec: OGB-LSC: Large-Scale Challenge for Machine Learning on Graphs. In: *NeurIPS: Datasets and Benchmarks Track.* 📅 *2021*

Christopher Morris, **Matthias Fey**, Nils M. Kriege: The Power of the Weisfeiler-Leman Algorithm for Machine Learning with Graphs. In: *International Joint Conference on Artificial Intelligence (IJCAI) — Survey Track.* 📅 *2021*

Matthias Fey*, Jan-Gin Yuen* and Frank Weichert: Hierarchical Inter-Message Passing for Learning on Molecular Graphs. In: *ICML Workshop on Graph Representation Learning and Beyond (GRL+).* 📅 *2020*

Marian Kleineberg, **Matthias Fey** and Frank Weichert: Adversarial Generation of Continuous Implicit Shape Representations. In: *Eurographics.* 📅 *2020*

Weihua Hu, **Matthias Fey**, Marinka Zitnik, Yuxiao Dong, Hongyu Ren, Bowen Liu, Michele Catasta and Jure Leskovec: Open Graph Benchmark: Datasets for Machine Learning on Graphs. In: *Advances in Neural Information Processing Systems (NeurIPS)* **(spotlight)**. 📅 *2020*

Matthias Fey, Jan Eric Lenssen, Christopher Morris, Jonathan Masci and Nils M. Kriege: Deep Graph Matching Consensus. In: *International Conference on Learning Representations (ICLR).* 📅 *2020*

Matthias Fey: Just Jump: Dynamic Neighborhood Aggregation in Graph Neural Networks. In: *ICLR Workshop on Representation Learning on Graphs and Manifolds (RLGM).* 📅 *2019*

Matthias Fey and Jan Eric Lenssen: Fast Graph Representation Learning with PyTorch Geometric. In: *ICLR Workshop on Representation Learning on Graphs and Manifolds (RLGM)* **(contributed talk)**. 📅 *2019*

Christopher Morris, Martin Ritzert, **Matthias Fey**, William L. Hamilton, Jan Eric Lenssen, Gaurav Rattan and Martin Grohe: Weisfeiler and Leman Go Neural: Higher-Order Graph Neural Networks. In: *Conference on Artificial Intelligence (AAAI).* 📅 *2019*

Jan Eric Lenssen, **Matthias Fey** and Pascal Libuschewski: Group Equivariant Capsule Networks. In: *Advances in Neural Information Processing Systems (NeurIPS).* 📅 *2018*

Nils M. Kriege, **Matthias Fey**, Denis Fisseler, Petra Mutzel and Frank Weichert: Recognizing Cuneiform Signs Using Graph-Based Methods. In: *SDM Workshop on Cost-Sensitive Learning (COST).* 📅 *2018*

Matthias Fey*, Jan Eric Lenssen*, Frank Weichert and Heinrich Müller: SplineCNN: Fast Geometric Deep Learning with Continuous B-Spline Kernels. In: *Computer Vision and Pattern Recognition (CVPR).* 📅 *2018*

Christian Eichhorn, **Matthias Fey**, Gabriele Kern-Isberner. CP- and OCF-networks – A Comparison. In *Fuzzy Sets and Systems, Volume 298: Special Issue on Graded Logical Approaches and Their Applications.* 📅 *2016*