1 Current Preprints

2 Publications

1. Sebastian Müller, Vanessa Toborek, Katharina Beckh, Matthias Jakobs, Christian Bauckhage, Pascal Welke (2023):
   An Empirical Evaluation of the Rashomon Effect in Explainable Machine Learning
   European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECMLPKDD)
   [pdf] [code] [doi] [arxiv] [conference]
2. Pascal Welke*, Maximilian Thiessen*, Fabian Jogl, Thomas Gärtner (2023):
   Expectation-Complete Graph Representations with Homomorphisms
   International Conference on Machine Learning (ICML)
   [pdf] [poster] [slides] [code] [reviews] [arxiv] [conference]
3. Ramsés J. Sánchez, Lukas Conrads, Pascal Welke, Kostadin Cvejoski, César Ojeda (2023):
   Hidden Schema Networks
   Annual Meeting of the Association for Computational Linguistics (ACL)
   [pdf] [poster] [slides] [code] [doi] [arxiv] [bibtex] [conference]
4. Vanessa Toborek, Moritz Busch, Malte Boßert, Christian Bauckhage, Pascal Welke (2023):
   A New Aligned Simple German Corpus
   Annual Meeting of the Association for Computational Linguistics (ACL)
   [pdf] [poster] [code] [doi] [arxiv] [bibtex] [conference]
5. Katharina Beckh, Sebastian Müller, Matthias Jakobs, Vanessa Toborek, Hanxiao Tan, Raphael Fischer, Pascal Welke, Sebastian Houben, Laura von Rüden (2023):
   Harnessing Prior Knowledge for Explainable Machine Learning: An Overview
   IEEE Conference on Secure and Trustworthy Machine Learning (SatML)
   [pdf] [video] [doi] [reviews] [arxiv] [bibtex] [conference]
6. Till Hendrik Schulz, Tamás Horváth, Pascal Welke, Stefan Wrobel (2022):
   A generalized Weisfeiler-Lehman graph kernel
   Machine Learning (111)
   [pdf] [code] [doi] [arxiv] [bibtex] [journal]
7. Dario Antweiler, Marc Harmening, Nicole Marheineke, Andre Schmeißer, Raimund Wegener, Pascal Welke (2022):
   Machine learning framework to predict nonwoven material properties from fiber graph representations
   Software Impacts (14)
   [pdf] [code] [reproducible run] [doi] [bibtex] [journal]
8. Dario Antweiler, Marc Harmening, Nicole Marheineke, Andre Schmeißer, Raimund Wegener, Pascal Welke (2022):
   Graph-Based Tensile Strength Approximation of Random Nonwoven Materials by

Interpretable Regression
Machine Learning with Applications (8)
[pdf] [code] [reproducible run] [doi] [journal]

9. Till Hendrik Schulz, Pascal Welke, Stefan Wrobel (2022):
Graph Filtration Kernels
AAAI Conference on Artificial Intelligence (AAAI)
[pdf] [poster] [slides] [code] [doi] [arxiv] [bibtex] [conference]
10. Richard Palme, Pascal Welke (2022):
Frequent Generalized Subgraph Mining via Graph Edit Distances
IoT Streams for Predictive Maintenance (IoTStreams@ECMLPKDD)
[pdf] [slides] [code] [doi] [bibtex] [workshop]
11. Janis Kalofolias, Pascal Welke, Jilles Vreeken (2021):
SUSAN: The Structural Similarity Random Walk Kernel
SIAM International Conference on Data Mining (SDM)
[pdf] [slides] [video] [code] [doi] [bibtex] [conference]
12. Pascal Welke (2020):
Efficient Frequent Subgraph Mining in Transactional Databases
International Conference on Data Science and Advanced Analytics (DSAA)
[pdf] [slides] [video] [doi] [bibtex] [conference]
13. Pascal Welke, Fouad Alkhoury, Christian Bauckhage, Stefan Wrobel (2020):
Decision Snippet Features
International Conference on Pattern Recognition (ICPR)
[pdf] [slides] [video] [code] [doi] [bibtex] [conference]
14. Pascal Welke, Florian Seiffarth, Michael Kamp, Stefan Wrobel (2020):
HOPS: Probabilistic Subtree Mining for Small and Large Graphs
SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)
[pdf] [slides] [video] [code] [doi] [bibtex] [conference]
15. Alexander Mehler, Wahed Hemati, Pascal Welke, Maxim Konca, Tolga Uslu (2020):
Multiple Texts as a Limiting Factor in Online Learning: Quantifying (Dis-)similarities of Knowledge Networks across Languages
Frontiers in Education | Digital Education
[pdf] [doi] [arxiv] [bibtex] [journal]
16. Pascal Welke, Tamás Horváth, Stefan Wrobel (2019):
Probabilistic and Exact Frequent Subtree Mining in Graphs Beyond Forests
Machine Learning (108)
[pdf] [doi] [bibtex] [journal]
17. Pascal Welke, Tamás Horváth, Stefan Wrobel (2018):
Probabilistic Frequent Subtrees for Efficient Graph Classification and retrieval
Machine Learning (107)
[pdf] [doi] [bibtex] [journal]
18. Till Hendrik Schulz, Tamás Horváth, Pascal Welke, Stefan Wrobel (2018):

Mining Tree Patterns with Partially Injective Homomorphisms
European Conference on Machine Learning and Knowledge Discovery in Databases (ECMLPKDD)
[pdf] [slides] [doi] [bibtex] [conference]

19. Pascal Welke, Alexander Markowetz, Torsten Suel, Maria Christoforaki (2016):
Three-hop Distance Estimation in Social Graphs
IEEE International Conference on Big Data (BigData)
[pdf] [slides] [doi] [bibtex] [conference]
20. Pascal Welke, Tamás Horváth, Stefan Wrobel (2016):
Min-Hashing for Probabilistic Frequent Subtree Feature Spaces
International Conference on Discovery Science (DS)
[pdf] [poster] [slides] [doi] [bibtex] [conference]
21. Katrin Ullrich, Jennifer Mack, Pascal Welke (2016):
Ligand Affinity Prediction with Multi-pattern Kernels
International Conference on Discovery Science (DS)
[pdf] [slides] [doi] [bibtex] [conference]
22. Pascal Welke, Ionut Andone, Konrad Blaszkiewicz, Alexander Markowetz (2016):
Differentiating Smartphone Users by App Usage
International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)
[pdf] [slides] [doi] [bibtex] [conference]
23. Pascal Welke, Tamás Horváth, Stefan Wrobel (2015):
Probabilistic Frequent Subtree Kernels
New Frontiers in Mining Complex Patterns (NFMCP@ECMLPKDD)
[pdf] [slides] [doi] [bibtex] [workshop]
24. Pascal Welke, Tamás Horváth, Stefan Wrobel (2014):
On the Complexity of Frequent Subtree Mining in Very Simple Structures
International Conference on Inductive Logic Programming (ILP)
[pdf] [slides] [doi] [bibtex] [conference]
25. Anne-Kathrin Mahlein, Till Rumpf, Pascal Welke, Heinz-Wilhelm Dehne, Ulrike Steiner, Erich-Christian Oerke (2013):
Development of Spectral Indices for Detecting and Identifying Plant Diseases
Remote Sensing of Environment (128)
[doi] [journal]

3 Books

26. Michael Kamp et al. (2021):
Machine Learning and Principles and Practice of Knowledge Discovery in Databases - International Workshops of ECML PKDD 2021, Virtual Event, September 13-17, 2021, Proceedings, Part I
[doi] [bibtex] [workshop proceedings]

27. Michael Kamp et al. (2021):
Machine Learning and Principles and Practice of Knowledge Discovery in Databases - International Workshops of ECML PKDD 2021, Virtual Event, September 13-17, 2021, Proceedings, Part II
[doi] [bibtex] [workshop proceedings]
28. Daniel Trabold, Pascal Welke, Nico Piatkowski (2020):
Proceedings of the Conference "Lernen, Wissen, Daten, Analysen", Online, September 9-11, 2020
[bibtex] [proceedings]
29. Pascal Welke (2019):
Efficient Frequent Subtree Mining Beyond Forests
Dissertations in Artificial Intelligence (348)
[pdf] [slides] [code] [bibtex] [book]

4 Nonarchival Peer Reviewed Venues

30. Maximilian Thiessen*, Pascal Welke*, Thomas Gärtner (2022):
Expectation Complete Graph Representations using Graph Homomorphisms
New Frontiers in Graph Learning Workshop (GLFrontiers2022@NeurIPS)
[pdf] [poster] [code] [reviews] [workshop]
31. Pascal Welke*, Maximilian Thiessen*, Thomas Gärtner (2022):
Expectation Complete Graph Representations using Graph Homomorphisms
Learning on Graphs Conference (LoG)
[pdf] [poster] [code] [reviews] [conference]
32. Dario Antweiler, Pascal Welke (2020):
Temporal Graph Analysis for Outbreak Pattern Detection in COVID-19 Contact Tracing Networks
Machine Learning in Public Health Workshop (MLPH@NeurIPS)
[pdf] [slides] [workshop]
33. Till Hendrik Schulz, Pascal Welke (2018):
On the Necessity of Graph Kernel Baselines
Graph Embedding and Mining Workshop, (GEM@ECMLPKDD)
[pdf] [poster] [workshop]
34. Pascal Welke (2017):
Simple Necessary Conditions for the Existence of a Hamiltonian Path with Applications to Cactus Graphs
Computer Science Conference for University of Bonn Students (CSCUBS)
[pdf] [arxiv] [bibtex] [workshop]