

Curriculum Vitæ

Personal Data

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Education and Positions

Secondary School	1982-1991	Staatliches Gymnasium Sulzbach; Abitur (1.0)
Master's Study	1991 - 1997	Computer Science (Minor: Economics) at Univ. des Saarlandes, Saarbrücken; Grade : Very Good (1.1)
Ph.D. research	1997 - 2002	Univ. des Saarlandes & Max-Planck Institute (MPI) for Computer Science, Saarbrücken. Advisor: Prof. Dr. Kurt Mehlhorn, Grade : Summa Cum Laude. Thesis awarded with the Dr.-Eduard-Martin Prize.
Guest Researcher	01-02/2002	Hungarian Academy of Sciences
Postdoc/Research Associate	2002 - 2005	MPI Informatik, Saarbrücken
Visiting Assistant Professor	02-04/2003	Duke University, Durham, NC, USA
Senior Researcher (W2)	2005 - 2007	MPI Informatik, Saarbrücken
Full Professor (W3, tenured)	2007 -	J.W. Goethe University, Frankfurt/Main
Coordinator	2014 -	DFG SPP 1736 (Algorithms for Big Data)
Dean of Studies	10/2014 - 03/2017 04/2019 - 09/2021	J.W. Goethe University, Frankfurt/Main
Fellow	2020 -	Frankfurt Institute for Advanced Studies (FIAS)

Grants

- *Massive Randomization and Certification*, funded with **364 800 EUR** by DFG Research Grant ME 2088/5-1 for the period 10/2020 – 09/2023 within FOR 2975 (Algorithms, Dynamics, and Information Flow in Networks).
- *LOEWE Priority Programme CMMS*: Interdisciplinary application of 10+ working groups from various institutions for a centre for multi-scale modelling, analysis and simulation of biological processes. Funded by the state of Hesse with over 4.5 Mio EUR (own share about **190 000 EUR**) in total for 2020 – 2023.
- *GOETHE-HLR*: Interdisciplinary application about 20 working groups at Goethe University Frankfurt for a new energy-efficient high-performance compute cluster. Funded by the DFG and the state of Hesse with about 7.5 Mio EUR in total for 2017/2018.
- *DFG SPP 1736 (Algorithms for Big Data)*, Coordinator of DFG priority research programme on algorithms for big data. Total funding volume (both periods) about 10 Mio EUR plus overheads for 2014 – 2021/22. Own share: over **1.8 Mio EUR** (1 237 300 EUR for coordination measures and 577 000 EUR for research project DynAmO).
- *MADALGO - Center for Massive Data Algorithmics*, a Center of the Danish National Research Foundation. As a funded partner the group at Frankfurt receives about **348 000 EUR** plus significant travel support for the periods 03/2008 - 02/2011 and 03/2012 - 02/2015.
- *Foundations of memory-efficient information processing for FAIR computing*, funded by the BMBF with **180 000 EUR** for the period 07/2009 - 12/2012.
- *LOEWE-CSC: An energy-efficient high-performance compute cluster*, funded by the DFG and the state of Hesse with about 4.9 Mio EUR in total for 2009/2010. Interdisciplinary application of 27 working groups at Goethe University Frankfurt.
- *Algorithms for Modern Hardware: Flash Memory*, 10/2007 - 09/2013, funded with about **455 000 EUR** by the DFG within the “Schwerpunktprogramm” 1307 *Algorithm Engineering*.
- *Algorithm Engineering for Large Graphs and Memory Hierarchies*, 2002 - 2007, (together with Prof. Dr. P. Sanders, Karlsruhe), funded in total with **450 000 EUR** by the DFG within the “Schwerpunktprogramm” 1126 *Algorithmik großer und komplexer Netzwerke*.
- Participation in and/or co-writing the proposals for the multi-site EU-projects ALCOM-IT, ALCOM-FT, and ALTEC-KIT and the GIF-project *Graph Algorithms: Theory and Practice*.

Awards and Honors

2020	ESA Test of Time Award for [49]
2019	Best Paper Award for [5] at ESA 19, Track A
2019	Best Paper Award for [6] at ESA 19, Track B
2011	Award <i>Germany Land of Ideas</i> for Ecosort (together with KIT Karlsruhe)
2010, 2009	Records in the JouleSort Competition (together with KIT Karlsruhe)
2003	Best Dissertation Award, University of Saarland

Selected Recent Program Committees

- Symposium on Theoretical Aspects of Computer Science '20
- Symposium on Parallelism in Algorithms and Architectures (SPAA) '19, '14, '03
- Workshop Algorithm Eng. & Experim. (ALENEX) '19, '17, '16, '14 (Co-Chair), '10, '04
- Symposium on Discrete Algorithms (SODA) '18
- Int. Symposium on Experimental Algorithms (SEA) '17, '11, '10, '06 (WEA)
- European Symp. on Algorithms (ESA) '16, '10 (Co-Chair), '06, '04
- Int. Colloq. on Automata, Languages and Programming (ICALP) '15, '07

Referee for most major conferences and journals related to algorithmics.

Teaching Activities

WS 00/01	Lecture	(Engl.)	“Algorithms for Different Models of Computation”	(MPI)
SS 01	Seminar	(Engl.)	“Algorithms for Large Data Sets”	(MPI)
WS 01/02	Minicourse	(Engl.)	“External Memory Algorithms”	(TU Budapest)
SS 03	Seminar	(Engl.)	“Parallel and External Memory Graph Algorithms”	(MPI)
WS 03/04	Lecture	(Engl.)	“Parallel and Distributed Algorithms”	(MPI)
SS 04	Lecture	(Ger.)	“Optimization”	(MPI)
WS 04/05	Lecture	(Ger.)	“Data Structures and Algorithms”	(MPI)
SS 05	Lecture	(Engl.)	“Approximation- and Online-Algorithms”	(MPI)
WS 05/06	Lecture	(Engl.)	“Data Structures and Algorithms”	(MPI)
SS 06	Lecture	(Engl.)	“Algorithms for Large Data Sets”	(MPI)
WS 06/07	Seminar	(Ger.)	“Topics in Algorithm Design”	(Frankfurt)
SS 07	Lecture	(Ger.)	“Efficient Algorithms”	(Frankfurt)
SS 07	Seminar	(Ger.)	“Parallel Algorithms”	(Frankfurt)
WS 07/08	Lecture	(Ger.)	“Algorithm Theory”	(Frankfurt)
WS 07/08	Lecture	(Engl.)	“Algorithm Engineering 1”	(Frankfurt)
SS 08	Lecture	(Ger.)	“Data Structures”	(Frankfurt)
SS 08	Lecture	(Engl.)	“Algorithm Engineering 2”	(Frankfurt)
SS 08	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
WS 08/09	Lecture	(Engl.)	“Parallel and Distributed Algorithms”	(Frankfurt)
WS 08/09	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
SS 09	Lecture	(Ger.)	“Data Structures”	(Frankfurt)
SS 09	Lecture	(Ger.)	“Efficient Algorithms”	(Frankfurt)
WS 09/10	Lecture	(Ger.)	“Algorithm Theory”	(Frankfurt)
WS 09/10	Lecture	(Engl.)	“Algorithm Engineering 1”	(Frankfurt)
WS 09/10	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
SS 10	Lecture	(Engl.)	“Algorithm Engineering 2”	(Frankfurt)
SS 10	Lab	(Engl.)	“Parallelization”	(Frankfurt)
SS 10	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
WS 10/11	Lecture	(Engl.)	“Parallel and Distributed Algorithms”	(Frankfurt)
WS 10/11	Lab	(Ger.)	“Experimental Algorithmics”	(Frankfurt)
WS 10/11	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
SS 11	Lecture	(Ger.)	“Data Structures”	(Frankfurt)
SS 11	Lecture	(Ger.)	“Efficient Algorithms”	(Frankfurt)

SS 11	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
SS 11	Lab	(Engl.)	“Parallelization”	(Frankfurt)
WS 11/12	Lecture	(Ger.)	“Algorithm Theory”	(Frankfurt)
WS 11/12	Lecture	(Engl.)	“Parallel and Distributed Algorithms”	(Frankfurt)
WS 11/12	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
SS 12	Sabbatical			
WS 12/13	Lecture	(Engl.)	“Algorithm Engineering 1”	(Frankfurt)
WS 12/13	Lecture	(Engl.)	“Parallel and Distributed Algorithms”	(Frankfurt)
WS 12/13	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
SS 13	Lecture	(Engl.)	“Algorithm Engineering 2”	(Frankfurt)
SS 13	Lecture	(Ger.)	“Data Structures”	(Frankfurt)
SS 13	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
SS 13	Lab	(Engl.)	“Parallelization”	(Frankfurt)
WS 13/14	Lecture	(Ger.)	“Theoretical Computer Science 1”	(Frankfurt)
WS 13/14	Lecture	(Engl.)	“Parallel and Distributed Algorithms”	(Frankfurt)
SS 14	Lecture	(Ger.)	“Efficient Algorithms”	(Frankfurt)
SS 14	Lab	(Engl.)	“Parallelization”	(Frankfurt)
SS 14	Lab	(Engl.)	“Experimental Algorithms”	(Frankfurt)
SS 14	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
WS 14/15	Lecture	(Ger.)	“Theoretical Computer Science 1”	(Frankfurt)
WS 14/15	Lecture	(Engl.)	“Parallel and Distributed Algorithms”	(Frankfurt)
SS 15	Lecture	(Ger.)	“Efficient Algorithms”	(Frankfurt)
SS 15	Lab	(Engl.)	“Parallelization”	(Frankfurt)
SS 15	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
WS 15/16	Lecture	(Ger.)	“Theoretical Computer Science 1”	(Frankfurt)
WS 15/16	Lecture	(Engl.)	“Parallel and Distributed Algorithms”	(Frankfurt)
SS 16	Lab	(Engl.)	“Parallelization”	(Frankfurt)
SS 16	Lab	(Engl.)	“Experimental Algorithms”	(Frankfurt)
SS 16	Seminar	(Ger.)	“Algorithms for large data sets”	(Frankfurt)
WS 16/17	Lecture	(Ger.)	“Theoretical Computer Science 1”	(Frankfurt)
WS 16/17	Lecture	(Engl.)	“Algorithm Engineering”	(Frankfurt)
SS 17	Lab	(Engl.)	“Parallelization”	(Frankfurt)
SS 17	Lecture	(Engl.)	“Current Topics in Theoretical Computer Science”	(Frankfurt)
SS 17	Seminar	(Ger.)	“Algorithms for large data sets”	(Frankfurt)
WS 17/18	Sabbatical			
SS 18	Lab	(Engl.)	“Parallelization”	(Frankfurt)
SS 18	Lecture	(Ger.)	“Data Structures”	(Frankfurt)
SS 18	Lecture	(Engl.)	“Current Topics in Theoretical Computer Science”	(Frankfurt)
WS 18/19	Lecture	(Ger.)	“Theoretical Computer Science 1”	(Frankfurt)
WS 18/19	Lecture	(Engl.)	“Parallel and Distributed Algorithms”	(Frankfurt)
SS 19	Lecture	(Engl.)	“Algorithm Engineering”	(Frankfurt)
SS 19	Lab	(Engl.)	“Parallelization”	(Frankfurt)
SS 19	Lab	(Engl.)	“Experimental Algorithms”	(Frankfurt)
WS 19/20	Lecture	(Engl.)	“Parallel Algorithms”	(Frankfurt)
WS 19/20	Seminar	(Ger.)	“Current Topics in Algorithm Engineering”	(Frankfurt)
SS 20	Lecture	(Ger.)	“Algorithms and Data Structures 1”	(Frankfurt)
SS 20	Lecture	(Engl.)	“Algorithm Engineering”	(Frankfurt)
WS 20/21	Lecture	(Ger.)	“Algorithms and Data Structures 2”	(Frankfurt)
WS 20/21	Lecture	(Engl.)	“Parallel Algorithms”	(Frankfurt)
SS 21	Lecture	(Engl.)	“Algorithm Engineering”	(Frankfurt)
SS 21	Lab	(Engl.)	“Parallelization”	(Frankfurt)

Publications

Theses

- [1] U. Meyer. *Design and Analysis of Sequential and Parallel Single-Source Shortest-Paths Algorithms*. PhD thesis, Universität des Saarlandes, 2002.
- [2] U. Meyer. Deterministische Simulation einer PRAM auf Gitterrechnern. Master thesis (in German), Universität des Saarlandes, 1995.

Refereed Conference Papers

- [3] G. S. Brodal, R. Fagerberg, D. Hammer, U. Meyer, M. Penschuck, H. Tran. An Experimental Study of External Memory Algorithms for Connected Components. In *Proc. 19th International Symposium on Experimental Algorithms (SEA)*, LIPIcs Vol. 190, pages 23:1-23:23, 2021.
- [4] P. Berenbrink, D. Hammer, D. Kaaser, U. Meyer, M. Penschuck, H. Tran. Simulating Population Protocols in Sub-Constant Time per Interaction. In *Proc. 28th Annual European Symposium on Algorithms (ESA)*, LIPIcs Vol. 173, pages 16:1-16:22, 2020.
- [5] P. Afshani, R. Fagerberg, D. Hammer, R. Jacob, I. Kostitsyna, U. Meyer, M. Penschuck, and N. Sitchinava. Fragile complexity of comparison-based algorithms. In *Proc. 27th Annual European Symposium on Algorithms (ESA)*, LIPIcs Vol. 144, pages 2:1-2:19, 2019.
- [6] T. Bläsius, T. Friedrich, M. Katzmann, U. Meyer, M. Penschuck, and C. Weyand. Efficiently generating geometric inhomogeneous and hyperbolic random graphs. In *Proc. 27th Annual European Symposium on Algorithms (ESA)*, LIPIcs Vol. 144, pages 21:1-21:14, 2019.
- [7] R. Fagerberg, D. Hammer, and U. Meyer. On optimal balance in B-trees: what does it cost to stay in perfect shape? In *Proc. 30th International Symposium on Algorithms and Computation (ISAAC)*, LIPIcs Vol. 149, pages 35:1-35:16, 2019.
- [8] C. J. Carstens, M. Hamann, U. Meyer, M. Penschuck, H. Tran, and D. Wagner. Parallel and I/O-efficient Randomisation of Massive Networks using Global Curveball Trades. In *Proc. 26th Annual European Symposium on Algorithms (ESA)*, LIPIcs Vol. 112, pages 11:1-11:15, 2018.
- [9] D. Ajwani, E. Duriakova, N. Hurley, U. Meyer, and A. Schickedanz. An Empirical Comparison of k-Shortest Simple Path Algorithms on Multicores. In *Proc. 47th International Conference on Parallel Processing (ICPP)*, pages 78:1-78:12, ACM, 2018.
- [10] M. Hamann, U. Meyer, M. Penschuck, and D. Wagner. I/O-efficient Generation of Massive Graphs Following the LFR Benchmark. In *Proc. 19th Workshop on Algorithm Engineering and Experiments (ALENEX)*, pages 58-72, SIAM, 2017.
- [11] S. Ashkiani, A. Davidson, U. Meyer, and J. Owens. GPU Multisplit. In *Proc. 21st Symposium on Principles and Practice of Parallel Programming (PPoPP)*, pages 12:1-12:13, ACM, 2016.
- [12] U. Meyer and M. Penschuck. Generating Massive Scale-Free Networks under Resource Constraints. In *Proc. 18th Workshop on Algorithm Engineering and Experiments (ALENEX)*, pages 32-52, SIAM, 2016.
- [13] A. Kovács, U. Meyer, and C. Ventre. Mechanisms with Monitoring for Truthful RAM Allocation. In *Proc. 11th International Conference on Web and Internet Economics (WINE)*, volume 9470 of *LNCS*, pages 398-412. Springer, 2015.
- [14] D. Ajwani, U. Meyer, and D. Veith. An I/O-efficient Distance Oracle for Evolving Real-World Graphs. In *Proc. 17th Workshop on Algorithm Engineering and Experiments (ALENEX)*, pages 159-172. SIAM, 2015.
- [15] A. Beckmann, U. Meyer, and D. Veith. An Implementation of I/O-Efficient Dynamic Breadth-First Search Using Level-Aligned Hierarchical Clustering. In *Proc. 21st Annual European Symposium on Algorithms (ESA)*, *LNCS*, Springer, 2013.

- [16] D. Ajwani, U. Meyer, and D. Veith. I/O-efficient hierarchical diameter approximation. In *Proc. 20th Annual European Symposium on Algorithms (ESA)*, LNCS, Springer, 2012.
- [17] M. Wibrál, P. Wollstadt, U. Meyer, N. Pampu, V. Priesemann, and R. Vicente. Revisiting Wiener’s principle of causality – interaction-delay reconstruction using transfer entropy, and multivariate analysis on delay-weighted graphs. In *Proc 4th Int. Conf. of the IEEE EMBS (EMBC)*, 2012.
- [18] A. Beckmann, J. Fedorowicz, J. Keller, and U. Meyer. A structural analysis of the A5/1 state transition graph. In *Proc. 1st Workshop on Graph Inspection and Traversal Engineering (GRAPHITE), EPTCS*, 2012.
- [19] D. Ajwani, A. Beckmann, U. Meyer, and D. Veith. I/O-efficient approximation of graph diameters by parallel cluster growing – a first experimental study. *10th Workshop on Parallel Systems and Algorithms (PASA)*, 2012.
- [20] U. Meyer, A. Negoescu, and V. Weichert. New Bounds for Old Algorithms: On the Average-Case Behavior of Classic Single-Source Shortest Path Approaches. In *Proc. 1st. Int. ICST Conference on Theory and Practice of Algorithms in (Computer) Systems (TAPAS)*, volume 6595 of LNCS, pages 217–228, Springer, 2011.
- [21] A. Beckmann, U. Meyer, P. Sanders, and J. Singler. Energy-Efficient Sorting using Solid State Disks. In *Proc. 1st Int. Green Computing Conference (IGCC)*, pages 191–202, IEEE, 2010.
- [22] A. Kovacs, U. Meyer, G. Moruz, and A. Negoescu. Online Paging for Flash Memory Devices. In *Proc. 20th Int. Symposium on Algorithms and Computation (ISAAC)*, volume 5878 of LNCS, pages 352–361. Springer, 2009.
- [23] D. Ajwani, A. Beckmann, R. Jacob, U. Meyer, and G. Moruz. On Computational Models for Flash Memory Devices. In *Proc. 8th Int. Symposium on Experimental Algorithms (SEA)*, volume 5526 of LNCS, pages 16–27. Springer, 2009.
- [24] U. Meyer and V. Osipov. Design and Implementation of a Practical I/O-efficient Shortest Paths Algorithm. In *Proc. 11th Workshop on Algorithm Engineering and Experiments (ALENEX)*, pages 85–96. SIAM, 2009.
- [25] U. Meyer. On Trade-Offs in External-Memory Diameter-Approximation. In *Proc. 11th Scandinavian Workshop on Algorithm Theory (SWAT)*, volume 5124 of LNCS, pages 426-436. Springer, 2008.
- [26] D. Ajwani, I. Malinger, U. Meyer, and S. Toledo. Characterizing the performance of Flash memory storage devices and its impact on algorithm design. In *Proc. 7th Intern. Workshop on Experimental Algorithms (WEA)*, volume 5038 of LNCS, pages 208-219. Springer, 2008.
- [27] U. Meyer. On Dynamic Breadth-First Search in External-Memory. In *Proc. 25th Annual Symposium on Theoretical Aspects of Computer Science (STACS)*, pages 551–560, IBFI Dagstuhl, 2008. Electronically available under <http://drops.dagstuhl.de/opus/volltexte/2008/1316>.
- [28] D. Ajwani, U. Meyer, and V. Osipov. Improved external memory BFS implementations. In *Proc. 9th Workshop on Algorithm Engineering and Experiments (ALENEX)*, pages 3–12. SIAM, 2007.
- [29] U. Meyer and N. Zeh. I/O-Efficient Undirected Shortest Paths with Unbounded Edge Lengths. In *Proc. 14th Ann. European Symposium on Algorithms (ESA)*, volume 4168 of LNCS, pages 540–551. Springer, 2006.
- [30] D. Ajwani, T. Friedrich, and U. Meyer. An $O(n^{2.75})$ algorithm for online topological ordering. In *Proc. 10th Scandinavian Workshop on Algorithm Theory (SWAT)*, volume 4059 of LNCS, pages 53–64. Springer, 2006.
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- [32] S. Funke, A. Kesselmann, U. Meyer, and M. Segal. A simple improved distributed algorithm for minimum CDS in unit disk graphs. In *1st IEEE Intern. Conf. on Wireless and Mobile Computing, Networking and Communications (WiMob)*, IEEE, 2005.

- [33] L. Arge, U. Meyer, and L. Toma. External memory algorithms for diameter and all-pairs shortest-paths on sparse graphs. In *Proc. ICALP 2004*, volume 3142 of *LNCS*, pages 146–157. Springer, 2004.
- [34] G. Brodal, R. Fagerberg, U. Meyer, and N. Zeh. Cache-oblivious data structures and algorithms for undirected breadth-first search and shortest paths. In *Proc. SWAT 2004*, volume 3111 of *LNCS*, pages 480–492. Springer, 2004.
- [35] U. Meyer and N. Zeh. I/O-efficient undirected shortest paths. In *Proc. 11th Ann. European Symposium on Algorithms (ESA)*, volume 2832 of *LNCS*, pages 434–445. Springer, 2003.
- [36] L. Laura, S. Leonardi, U. Meyer, S. Mollozzi, and J. Sibeyn. Algorithms and experiments for the webgraph. In *Proc. 11th Ann. European Symposium on Algorithms (ESA)*, volume 2832 of *LNCS*, pages 703–714. Springer, 2003.
- [37] K. Mehlhorn and U. Meyer. External-memory breadth-first search with sublinear I/O. In *Proc. 10th Ann. European Symposium on Algorithms (ESA)*, volume 2461 of *LNCS*, pages 723–735. Springer, 2002.
- [38] U. Meyer. Buckets strike back: Improved parallel shortest paths. In *Proc. 16th Intern. Parallel and Distributed Processing Symposium (IPDPS 2002)*. IEEE, 2002.
- [39] J. F. Sibeyn, J. Abello, and U. Meyer. Heuristics for semi-external depth first search on directed graphs. In *Proc. Symposium on Parallel Algorithms and Architectures (SPAA)*, pages 282–292. ACM, 2002.
- [40] L. Arge, U. Meyer, L. Toma, and N. Zeh. On external-memory planar depth first search. In *Proc. 7th Intern. Workshop on Algorithms and Data Structures (WADS 2001)*, volume 2125 of *LNCS*, pages 471–482. Springer, 2001.
- [41] S. Edelkamp and U. Meyer. Theory and practice of time-space trade-offs in memory limited search. In *Proc. Joint German/Austrian Conference on Artificial Intelligence (KI-2001)*, volume 2174 of *LNAI*, pages 169–184. Springer, 2001.
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- [43] U. Meyer. Heaps are better than buckets: Parallel shortest paths on unbalanced graphs. In *Proc. Euro-Par 2001 Parallel Processing*, volume 2150 of *LNCS*, pages 343–351. Springer, 2001.
- [44] U. Meyer. Single-source shortest-paths on arbitrary directed graphs in linear average-case time. In *Proc. 12th Ann. Symp. on Discrete Algorithms*, pages 797–806. ACM–SIAM, 2001.
- [45] U. Meyer and P. Sanders. Parallel shortest path for arbitrary graphs. In *Proc. Euro-Par 2000 Parallel Processing*, volume 1900 of *LNCS*, pages 461–470. Springer, 2000.
- [46] K. Brengel, A. Crauser, U. Meyer, and P. Ferragina. An experimental study of priority queues in external memory. In *Proc. 3rd Intern. Workshop on Algorithm Engineering (WAE-99)*, volume 1668 of *LNCS*, pages 345–359. Springer, 1999.
- [47] A. Crauser, K. Mehlhorn, U. Meyer, and P. Sanders. A parallelization of Dijkstra’s shortest path algorithm. In *Proc. 23rd Symp. on Mathematical Foundations of Computer Science*, volume 1450 of *LNCS*, pages 722–731. Springer, 1998.
- [48] A. Crauser, P. Ferragina, K. Mehlhorn, U. Meyer, and E. A. Ramos. Randomized external-memory algorithms for some geometric problems. In *Proc. 14th ACM Symposium on Computational Geometry (SCG-98)*, pages 259–268. ACM, 1998.
- [49] U. Meyer and P. Sanders. Δ -stepping: A parallel shortest path algorithm. In *Proc. 6th Ann. European Symposium on Algorithms (ESA)*, volume 1461 of *LNCS*, pages 393–404. Springer, 1998.
- [50] U. Meyer and J. F. Sibeyn. Gossiping large packets on full-port tori. In *Proc. Euro-Par 1998 Parallel Processing*, volume 1470 of *LNCS*, pages 1040–1046. Springer, 1998.
- [51] M. Kaufmann, U. Meyer, and J. F. Sibeyn. Matrix transpose on meshes: Theory and practice. In *Proc. 11th International Parallel Processing Symposium (IPPS-97)*, pages 315–319. IEEE, 1997.

- [52] U. Meyer and J. F. Sibeyn. Simulating the simulator: Deterministic PRAM simulation on a mesh simulator. In *Eurosim '95*, pages 285–290. Elsevier, 1995.
- [53] M. Kaufmann, U. Meyer, and J. F. Sibeyn. Towards practical permutation routing on meshes. In *Proc. 6th IEEE Symposium on Parallel and Distributed Processing*, pages 656–663. IEEE, 1994.

Refereed Journal Papers

- [54] U. Meyer and M. Penschuck. Large-scale graph generation: Recent results of the SPP 1736 – Part II. *it - Information Technology*, 62(3-4):135-144, 2020.
- [55] D. Funke, S. Lamm, U. Meyer, M. Penschuck, P. Sanders, C. Schulz, D- Strash, and M. von Looz. Communication-free massively distributed graph generation. *J. Parallel Distributed Comput.*, 131:200–217, 2019.
- [56] M. Hamann, U. Meyer, M. Penschuck, H. Tran, and D. Wagner. I/O-Efficient Generation of Massive Graphs Following the LFR Benchmark. *ACM J. Exp. Algorithmics*, 23:2.5:1–2.5:33, 2018.
- [57] K. Kersting and U. Meyer. From Big Data to Big Artificial Intelligence? - Algorithmic Challenges and Opportunities of Big Data. *KI*, 32(1):3–8, 2018.
- [58] M. Behdju and U. Meyer. DFG Priority Programme SPP 1736: Algorithms for Big Data. *KI*, 32(1):77–84, 2018.
- [59] S. Ashkiani, A. Davidson, U. Meyer, and J. Owens. GPU Multisplit: An Extended Study of a Parallel Algorithm. *ACM Transactions on Parallel Computing*, 4(1):2:1–2:44, 2017.
- [60] A. Kovács, U. Meyer, G. Moruz, and A. Negoescu. The optimal structure of algorithms for α -paging. *Information Processing Letters*, 115(12):932–938, 2015.
- [61] P. Wollstadt, U. Meyer, and M. Wibrál. A Graph Algorithmic Approach to Separate Direct from Indirect Neural Interactions. *PLoS ONE* 10(10):e0140530, 2015.
- [62] U. Meyer and V. Weichert. Algorithm Engineering für moderne Hardware. *Informatik Spektrum*, 36(2):153–161, 2013.
- [63] U. Meyer and N. Zeh. I/O-efficient shortest path algorithms for undirected graphs with random and bounded edge lengths. *ACM Transactions on Algorithms*, 8(3):22, 2012.
- [64] A. Beckmann, U. Meyer, P. Sanders, and J. Singler. Energy-Efficient Sorting using Solid State Disks. *Sustainable Computing: Informatics and Systems* (Elsevier), 1(2):151–163, June 2011.
- [65] D. Ajwani, T. Friedrich, and U. Meyer. An $O(n^{2.75})$ algorithm for incremental topological ordering. *ACM Transactions on Algorithms*, 4(4), 2008.
- [66] S. Funke, A. Kesselman, U. Meyer, and M. Segal. A simple improved distributed algorithm for minimum CDS in unit disk graphs. *ACM Transactions on Sensor Networks*, 2(3):444–453, 2006.
- [67] D. Donato, L. Laura, S. Leonardi, U. Meyer, S. Millozzi, and J. F. Sibeyn. Algorithms and Experiments for the Webgraph. *Journal of Graph Algorithms and Applications*, 10(2), 2006.
- [68] L. Arge, U. Meyer, L. Toma, and N. Zeh. On external-memory planar depth first search. *Journal of Graph Algorithms and Applications*, 7(2):105–129, 2003.
- [69] U. Meyer. Average-case complexity of single-source shortest-paths algorithms: Lower and upper bounds. *Journal of Algorithms*, 48:91–134, 2003.
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