Christian Schulz

Curriculum Vitae

Contact Information

Address: Am Neuenheimer Feld 205, R. 01.328, Heidelberg, Germany
Date of Birth: February 1984
Email: christian.schulz@informatik.uni-heidelberg.de
Website w/ publications: https://schulzchristian.github.io

University Education

November 2019	UNIVERSITY OF VIENNA. Habilitation, Computer Science. Thesis: *Scalable Graph Algorithms*
March 2010– May 2013	KARLSRUHE INSTITUTE OF TECHNOLOGY. Ph.D., summa cum laude, Computer Science. Thesis: *High Quality Graph Partitioning* Advisor: *Prof. Dr. Sanders*
October 2004– December 2009 February 2010	KARLSRUHE INSTITUTE OF TECHNOLOGY. Diplom, with highest distinction, GPA 1.0/1.0, Mathematics. Diplom, with highest distinction, GPA 1.1/1.0, Computer Science.

Professional Experience

October 2020–	UNIVERSITY OF HEIDELBERG. Full Professor of Computer Science (W3) *Applied Computer Science*
January 2017– September 2020	UNIVERSITY OF VIENNA. Researcher in the Group of Prof. Dr. Henzinger Universitätsassistent *Leading Algorithm Engineering Subgroup*
March 2010– December 2017 since 2013:	KARLSRUHE INSTITUTE OF TECHNOLOGY. Researcher in the Group of Prof. Dr. Sanders *Leading Parallel Algorithms & Graph Partitioning Subgroup*
October 2015– December 2015	TU VIENNA / VIENNA PHD SCHOOL OF INFORMATICS. Visiting Professor
September 2015– February 2016	TU VIENNA. Researcher in the Group of Prof. Dr. Träff

Honors and Awards

2020	Best Paper Award @ IEEE Cluster
2019	PACE Implementation Challenge Winner – Track A
2018	SPP Algorithms for Big Data: Best Paper Award
2018	Best Paper Award @ IPDPS'18
2017	Best Paper Nomination @ GECCO'17
2017	Heinz Billing Prize for the Advancement of Scientific Computing
2014	KIT Doctoral Award in the Area of Competence "Information, Communication and Organization"
2014	Uniserv Dissertation Award
2012	Best Scores in Graph Partitioning Subchallenge of the 10th DIMACS Implementation Challenge
2010	Best Student of Department of Informatics (KIT)
2003	Best Student of Fritz-Reuter-Oberschule

Professional Service

PC Member for SBAC-PAD 2015, HPGDMP 2016, ESA 2017, IC3 2017, IPDPS 2018, IC3 2018, SNAMS 2018, IPEC 2019, IPDPS 2019, ISC 2019, ALENEX'20, CSC'20, SC'20, IPDPS'21.

Reviewer for JEA, ALENEX, SPAA, IPDPS, DIMACS, ESA, SEA, Euro-Par, HiPC, TPDS, EGPGV, EAAI, TDSC, JPDC, SODA, CLUS, PARCO, TVCG, JGAA, TOPC, KAIS, SISC, Algorithmica, EJCO, TC, Network Science, COR, TKDE, EJOR.

SIAM ACDA Nominating Committee Member

Co-organizer:

Shonan Meeting "Parameterized graph algorithms & data reduction: Theory meets practice"

Guest Editor:

Special Issue of Algorithms "Graph Partitioning: Theory, Engineering and Applications".

Grants

[1] Michael Axtmann, Timo Bingmann, Thomas Balyo, Peter Sanders, Lorenz Hübschle-Schneider and Christian Schulz. Advanced Load Balancing for Complex Problems. JUQUEEN access: Mai/15-April/18 (multiple periods). Total granted compute time: 30.0 Mio Core-H $\approx$ 258T Euro. Juelich Supercomputing Centre (JSC). 2017.

[2] Michael Axtmann, Timo Bingmann, Peter Sanders, and Christian Schulz. Advanced Load Balancing for Complex Problems. SuperMUC access: Jul/15-Mai/18. Granted compute time: 8.0 Mio Core-H $\approx$ 77T Euro. Leibniz Supercomputing Centre (LRZ). 2015.

[3] Peter Sanders, Christian Schulz and Dorothea Wagner. Engineering Algorithms for Partitioning Large Graphs. DFG application for continuation of SA 933/10-1, SCHU 2567/1-2 and WA 654/19-1. Funded: 580T Euro.

[4] Christian Schulz. Algorithm Engineering for Process Mapping. FWF application. Joint project P 31763-N31 between TU Vienna and University Vienna. Funded: 305T Euro.

Teaching Experience as Lecturer

2019-20	ADVANCED TOPICS IN ALGORITHMS
2019-20	NUMERICAL ALGORITHMS
2019	PARALLEL AND DISTRIBUTED ALGORITHMS
2018-19	NUMERICAL ALGORITHMS
2018-19	ALGORITHMS AND DATA STRUCTURES II
2018	ALGORITHMS AND DATA STRUCTURES
2018	ALGORITHMS AND DATA STRUCTURES II
2017-18	ADVANCED ALGORITHMS
2016	ALGORITHMS II
2014-17	5xGRAPH PARTITIONING AND CLUSTERING

Open Source Software

2020	DYNGRAPHLAB – DYNAMIC GRAPH ALGORITHMS
2020	DMAX – DATA REDUCTION FOR MAXIMUM CUT
2019	KASVM – KARLSRUHE SUPPORT VECTOR MACHINE
2019	DYREACH – DYNAMIC REACHABILITY
2019	VIECUT – VIENNA MINIMUM CUTS
2018	VIECLUS – VIENNA GRAPH CLUSTERING
2018	KAGEN – KARLSRUHE GRAPH GENERATION
2017	VIEM – VIENNA MAPPING AND SPARSE QUADRATIC ASSIGNMENT
2017	KAHYPAR – KARLSRUHE HYPERGRAPH PARTITIONING
2017	KALP – KARLSRUHE LONGEST PATHS
2015	KAMIS – KARLSRUHE MAXIMUM INDEPENDENT SET
2015	KADRAW – KARLSRUHE GRAPH DRAWING
2013	KAHIP – KARLSRUHE HIGH QUALITY PARTITIONING

Research Interests

Graph Partitioning and Clustering, Parallel Algorithms, Combinatorial Optimization, Big Data

Supervised Theses

M. Schuler (BA), J. Fietz (MA), M. Birn (MA), F. Ziegler (BA), A. Wagner (MA), K. Hübner (BA), M. Wegner (BA), S. Lamm (BA), V. Henne (MA), J. Dahlum (BA), J. Ebbing (BA), S. Lamm (MA), R. Williger (BA), M. Samson (BA), D. Hespe (MA), R. Andre (BA), Y. Kolev (BA), D. Seemaier (BA), S. Biedermann (BA), C. Öhl (BA), T. Ribizel (MA), M. Schmitt (BA), C. Mercatoris (BA), R. Zimmermann (BA), R. Paul (BA), D. Ferizovic (MA), D. Seemaier (MA), K. von Kirchbach (MA), W. Ost (MA), J. Trummer (BA), J. Niedermüller (MA), A. Stockinger (BA), A. Gellner (MA), T. Fuchs (BA), O. Kröger (MA), J. Trummer (MA), T. Waibel (BA).

Currently running student projects:
O. Kröger (MA), J. Trummer (MA), T. Waibel (BA)

Supervised Student Research Assistants

M. Djurev, S. Lamm, M. Wegner, J. Ebbing, R. Williger, T. Ribizel, S. Biedermann, R. Andre, D. Seemaier, M. Schmitt, R. Paul, K. Kirchbach, Q. Cheng, J. Trummer

Book Chapters and Lecture Notes

[1] David Bader, Andrea Kappes, Henning Meyerhenke, Peter Sanders, Christian Schulz and Dorothea Wagner. Benchmarking for Graph Clustering and Partitioning. In *Encyclopedia of Social Network Analysis and Mining*, 2014. Updated article appeared 2018. DOI: `https://doi.org/10.1007/978-1-4614-6170-8_23`.

[2] Christian Schulz and Sebastian Korbinian Bayer, Fellipe Bernardes-Lima, Jan Jacob, Robert Hangu, Sergey Hayrapetyan, Demian Hespe, Christoph Hess, Sebastian Lamm, Eike Röhrs, Henning Schulz, Christian Steiger, Matthias Stumpp, Marvin Teichmann. Graph Partitioning and Graph Clustering in Theory and Practice. Lecture Notes. Karlsruhe Institute of Technology and Vienna PhD School of Informatics. 2015. PDF.

[3] Aydin Buluc, Henning Meyerhenke, Ilya Safro, Peter Sanders, Christian Schulz. Recent Advances in Graph Partitioning. Algorithm Engineering: Selected Results and Surveys. Volume 9220 of LNCS. Springer-Verlag. 2016. DOI: `https://doi.org/10.1007/978-3-319-49487-6_4`.

[4] Christian Schulz and Darren Strash. Graph Partitioning: Formulations and Applications to Big Data. In *Encyclopedia on Big Data Technologies*, Springer, 2019. DOI: `https://doi.org/10.1007/978-3-319-63962-8_312-2`.

[5] Sonja Biedermann, Monika Henzinger, Christian Schulz and Bernhard Schuster. Vienna Graph Clustering. Invited chapter for *Methods in Molecular Biology: Protein-Protein Interaction Networks*, Volume 2074 of Methods in Molecular Biology, pages 215–231, Springer, 2020, DOI: `https://doi.org/10.1007/978-1-4939-9873-9_16`..

Journal Articles

[6] Ilya Safro, Peter Sanders, and Christian Schulz. Advanced Coarsening Schemes for Graph Partitioning. *ACM Journal of Experimental Algorithms*. Volume 19, Article No. 2.2, 2015. DOI: `http://doi.acm.org/10.1145/2670338`.

[7] Heiko Papenfuß, Peter Sanders, and Christian Schulz. Turbo für Graphdatenbanken: Graphpartitionierung mit KaHIP. *JavaSPEKTRUM 01/2015*. PDF.

[8] Roland Glantz, Henning Meyerhenke, and Christian Schulz. Tree-based Coarsening and Partitioning of Complex Networks. *Invited to special issue of ACM Journal of Experimental Algorithms*. Volume 21, Article No. 1, 2016. DOI: `http://doi.acm.org/10.1145/2851496`.

[9] Peter Sanders and Christian Schulz. Scalable Generation of Scale-free Graphs. *Information Processing Letters*. Volume 116, Article No. 7, pages 489–491, 2016. DOI: `https://doi.org/10.1016/j.ipl.2016.02.004`.

[10] Henning Meyerhenke, Peter Sanders and Christian Schulz. Partitioning (Hierarchically Clustered) Complex Networks via Size-Constrained Graph Clustering. *ACM Journal of Heuristics*, Volume 22, Issue 5, pages 759–782, 2016. DOI: `https://doi.org/10.1007/s10732-016-9315-8`.

[11] Henning Meyerhenke, Peter Sanders and Christian Schulz. Parallel Graph Partitioning for Complex Networks. *IEEE Transactions on Parallel and Distributed Systems*, Volume 28, Issue 9, pages 2625–2638, 2017. DOI: `https://doi.org/10.1109/TPDS.2017.2671868`.

[12] Sebastian Lamm, Peter Sanders, Christian Schulz, Darren Strash, and Renato F. Werneck. Finding Near-Optimal Independent Sets at Scale. *ACM Journal of Heuristics*, Volume 23, Issue 4, pages 207–229, 2017. DOI: `https://doi.org/10.1007/s10732-017-9337-x`.

[13] Henning Meyerhenke, Martin Nöllenburg and Christian Schulz. Drawing Large Graphs by Multilevel Maxent-Stress Optimization. *IEEE Transactions on Visualization and Computer Graphics*, Volume 24, Issue 5, pages 1814–1827. 2018. DOI: `https://doi.org/10.1109/TVCG.2017.2689016`.

[14] Monika Henzinger, Alexander Noe, Christian Schulz and Darren Strash. Practical Minimum Cut Algorithms. Invited to special issue of *ACM Journal of Experimental Algorithms (ACM JEA) for ALENEX 2018*, Volume 23, pages 1.9:1–1.8:22, 2018. DOI: `https://doi.org/10.1145/3274662`.

[15] Daniel Funke, Sebastian Lamm, Ulrich Meyer, Peter Sanders, Christian Schulz, Darren Strash and Moritz von Looz. Communication-free Massively Distributed Graph Generation. Invited to special issue of *Journal of Parallel and Distributed Computing for IPDPS'18*, Volume 131, pages 200–217, 2019. DOI: `https://doi.org/10.1016/j.jpdc.2019.03.011`.

[16] Demian Hespe, Christian Schulz and Darren Strash. Scalable Kernelization for Maximum Independent Sets. In *ACM Journal of Experimental Algorithms (ACM JEA)*, Volume 24, Issue 1, pages 1.16:1–1.16:22, 2019. DOI: `http://doi.acm.org/10.1145/3355502`.

[17] Alexandra Henzinger, Alexander Noe and Christian Schulz. ILP-based Local Search for Graph Partitioning. In *ACM Journal of Experimental Algorithms (ACM JEA)*, accepted, 2020. DOI: `https://doi.org/10.1145/3398634`.

[18] Yaroslav Akhremtsev, Peter Sanders and Christian Schulz. High-Quality Shared-Memory Graph Partitioning. *IEEE Transactions on Parallel and Distributed Systems*, Volume 31, Issue 11, pages 2710–2722, 2020. DOI: `https://doi.org/10.1109/TPDS.2020.3001645`.

[19] Christian Schulz, Jesper Larsson Träff and Konrad von Kirchbach. Better Process Mapping and Sparse Quadratic Assignment. In *ACM Journal of Experimental Algorithms (ACM JEA)*, accepted, 2020.

[20] Orlando Moreira, Merten Popp and Christian Schulz. Evolutionary Multi-Level Acyclic Graph Partitioning. In *ACM Journal of Heuristics*, accepted, 2020.

Conference Articles

[21] Daniel Delling, Robert Görke, Christian Schulz and Dorothea Wagner. Orca Reduction and ContrAction Graph Clustering. In *Proceedings of the 5th International Conference on Algorithmic Aspects in Information and Management (AAIM)*, volume 5564 of LNCS, pages 152–165. Springer, 2009. DOI: `https://doi.org/10.1007/978-3-642-02158-9_14`.

[22] Manuel Holtgrewe, Peter Sanders and Christian Schulz. Engineering a Scalable High Quality Graph Partitioner. In *24th IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2010. DOI: `https://doi.org/10.1109/IPDPS.2010.5470485`.

[23] Vitaly Osipov, Peter Sanders, Christian Schulz and Manuel Holtgrewe. Engineering State-of-the-Art Graph Partitioning Libraries @KIT. In *Proceedings of the Workshop on Computational Methods in Science and Engineering (SimLabs@KIT)*, KIT Scientific Publishing, pages 117–130. 2010. PDF.

[24] Peter Sanders and Christian Schulz. Engineering Multilevel Graph Partitioning Algorithms. In *Proceedings of the 19th European Symposium on Algorithms (ESA)*, volume 6942 of LNCS, pages 469–480. Springer, 2011. DOI: `https://doi.org/10.1007/978-3-642-23719-5_40`.

[25] Peter Sanders and Christian Schulz. Distributed Evolutionary Graph Partitioning. In *Proceedings of the 14th Workshop on Algorithm Engineering and Experimentation (ALENEX)*, pages 16-19, 2012. DOI: `https://doi.org/10.1137/1.9781611972924.2`.

[26] Ilya Safro, Peter Sanders and Christian Schulz. Advanced Coarsening Schemes for Graph Partitioning. In *Proceedings of the 11th Symposium on Experimental Algorithms (SEA)*, volume 7276 of LNCS, pages 369–380. Springer, 2012. DOI: `https://doi.org/10.1007/978-3-642-30850-5_32`.

[27] Vitaly Osipov, Peter Sanders and Christian Schulz. Engineering Graph Partitioning Algorithms. In *Proceedings of the 11th Symposium on Experimental Algorithms (SEA)*, volume 7276 of LNCS, pages 18–26. Springer, 2012. DOI: `https://doi.org/10.1007/978-3-642-30850-5_3`.

[28] Jonas Fietz, Matthias Krause, Peter Sanders, Christian Schulz and Vincent Heuveline. Optimized Hybrid Parallel Lattice Boltzmann Fluid Flow Simulations on Complex Geometries. In *Proceedings of the 18th International European Conference on Parallel*

Computing (Euro-Par), volume 7484 of LNCS, pages 818–829. Springer, 2012. DOI: `https://doi.org/10.1007/978-3-642-32820-6_81`.

[29] Peter Sanders and Christian Schulz. High Quality Graph Partitioning. In *Proceedings of the 10th DIMACS Implementation Challenge Workshop: Graph Partitioning and Clustering*, pages 1–17, AMS, 2013. PDF.

[30] Peter Sanders and Christian Schulz. Think Locally, Act Globally: Highly Balanced Graph Partitioning. In *Proceedings of the 12th Symposium on Experimental Algorithms (SEA)*, volume 7933 of LNCS, pages 164–175. Springer, 2013. DOI: `https://doi.org/10.1007/978-3-642-38527-8_16`.

[31] Marcel Birn, Vitaly Osipov, Peter Sanders, Christian Schulz and Nodari Sitchinava. Efficient Parallel and External Matchings. In *Proceedings of the 19th International European Conference on Parallel Computing (Euro-Par)*, volume 8097 of LNCS, pages 659–670. Springer, 2013. DOI: `https://doi.org/10.1007/978-3-642-40047-6_66`.

[32] Roland Glantz, Henning Meyerhenke and Christian Schulz. Tree-based Coarsening and Partitioning of Complex Networks. In *Proceedings of the 13th Symposium on Experimental Algorithms (SEA)*, volume 8504 of LNCS, pages 364–375. Springer, 2014. DOI: `https://doi.org/10.1007/978-3-319-07959-2_31`.

[33] Henning Meyerhenke, Peter Sanders and Christian Schulz. Partitioning Complex Networks via Size-constrained Clustering. In *Proceedings of the 13th Symposium on Experimental Algorithms (SEA)*, volume 8504 of LNCS, pages 351–363. Springer, 2014. DOI: `https://doi.org/10.1007/978-3-319-07959-2_30`.

[34] Yaroslav Akhremtsev, Peter Sanders and Christian Schulz. (Semi-)External Algorithms for Graph Partitioning and Clustering. In *Proceedings of the 17th Workshop on Algorithm Engineering and Experimentation (ALENEX)*, pages 33-43, 2015. DOI: `https://doi.org/10.1137/1.9781611973754.4`.

[35] Henning Meyerhenke, Peter Sanders and Christian Schulz. Parallel Graph Partitioning for Complex Networks. In *29th IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2015. DOI: `https://doi.org/10.1109/IPDPS.2015.18`.

[36] Michael Axtmann, Timo Bingmann, Peter Sanders and Christian Schulz. Practical Massively Parallel Sorting. In *Proceedings of the 27th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA)*, pages 13-23. ACM, 2015. DOI: `https://doi.org/10.1145/2755573.2755595`.

[37] Sebastian Lamm, Peter Sanders and Christian Schulz. Graph Partitioning for Independent Sets. In *Proceedings of the 14th Symposium on Experimental Algorithms (SEA)*, volume 8504 of LNCS, pages 68–81. Springer, 2015. DOI: `https://doi.org/10.1007/978-3-319-20086-6_6`.

[38] Henning Meyerhenke, Martin Nöllenburg and Christian Schulz. Drawing Large Graphs by Multilevel Maxent-Stress Optimization. In *Proceedings of the 23rd International Symposium on Graph Drawing & Network Visualization (GD)*, volume

9411 of LNCS, pages 30-43. Springer, 2015. DOI: `https://doi.org/10.1007/978-3-319-27261-0_3`.

[39] Nitin Ahuja, Matthias Bender, Peter Sanders, Christian Schulz and Andreas Wagner. Incorporating Road Networks into Territory Design. In *Proceedings of the 23rd International Conference on Advances in Geographic Information Systems (GIS)*. ACM Press, 2015. DOI: `https://doi.org/10.1145/2820783.2820800`.

[40] Sebastian Schlag, Vitali Henne, Tobias Heuer, Henning Meyerhenke, Peter Sanders and Christian Schulz. k-way Hypergraph Partitioning via n-Level Recursive Bisection. In *Proceedings of the 18th Workshop on Algorithm Engineering and Experimentation (ALENEX)*, pages 53-67. 2016. DOI: `https://doi.org/10.1137/1.9781611974317.5`.

[41] Sebastian Lamm, Peter Sanders, Christian Schulz, Darren Strash and Renato F. Werneck Finding Near-Optimal Independent Sets at Scale. In *Proceedings of the 18th Workshop on Algorithm Engineering and Experimentation (ALENEX)*, pages 138-150. 2016. DOI: `https://doi.org/10.1137/1.9781611974317.12`.

[42] Jakob Dahlum, Sebastian Lamm, Peter Sanders, Christian Schulz, Darren Strash and Renato F. Werneck. Accelerating Local Search for the Maximum Independent Set Problem. In *Proceedings of the 15th Symposium on Experimental Algorithms (SEA)*, volume 9685 of LNCS, pages 118–133. Springer, 2016. DOI: `https://doi.org/10.1007/978-3-319-38851-9_9`.

[43] Peter Sanders and Christian Schulz. Advanced Multilevel Node Separator Algorithms. In *Proceedings of the 15th Symposium on Experimental Algorithms (SEA)*, volume 9685 of LNCS, pages 294–309. Springer, 2016. DOI: `https://doi.org/10.1007/978-3-319-38851-9_20`.

[44] Peter Sanders, Christian Schulz, Darren Strash and Robert Williger. Distributed Evolutionary k-way Node Separators. In *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO)*, pages 345–252, 2017. **Best Paper Nominee**. DOI: `https://doi.org/10.1145/3071178.3071204`.

[45] Christian Schulz and Jesper Larsson Träff. Better Process Mapping and Sparse Quadratic Assignment. In *Proceedings of the 16th Symposium on Experimental Algorithms (SEA)*, volume 75 of LIPIcs, pages 4:1–4:15, 2017. DOI: `https://doi.org/10.4230/LIPIcs.SEA.2017.4`.

[46] Orlando Moreira, Merten Popp and Christian Schulz. Graph Partitioning with Acyclicity Constraints. In *Proceedings of the 16th Symposium on Experimental Algorithms (SEA)*, volume 75 of LIPIcs, pages 30:1–30:15, 2017. DOI: `https://doi.org/10.4230/LIPIcs.SEA.2017.30`.

[47] Monika Henzinger, Alexander Noe, Christian Schulz and Darren Strash. Practical Minimum Cut Algorithms. In *Proceedings of the 20th Workshop on Algorithm Engineering and Experimentation (ALENEX)*, pages 48–61, 2018. DOI: `https://doi.org/10.1137/1.9781611975055.5`.

[48] Demian Hespe, Christian Schulz and Darren Strash. Scalable Kernelization for Maximum Independent Sets. In *Proceedings of the 20th Workshop on Algorithm Engineering and Experimentation (ALENEX)*, pages 223–237, 2018. DOI: `https://doi.org/10.1137/1.9781611975055.19`.

[49] Daniel Funke, Sebastian Lamm, Peter Sanders, Christian Schulz, Darren Strash and Moritz von Looz. Communication-free Massively Distributed Graph Generation. In *32nd IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pages 336–347, 2018. **Best Paper Award**. DOI: `https://doi.org/10.1109/IPDPS.2018.00043`.

[50] Robin Andre, Sebastian Schlag and Christian Schulz. Memetic Multilevel Hypergraph Partitioning. In *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO)*, pages 347–354, ACM, 2018. DOI: `https://doi.org/10.1145/3205455.3205475`.

[51] Orlando Moreira, Merten Popp and Christian Schulz. Evolutionary Multi-level Acyclic Graph Partitioning. In *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO)*, pages 331–339, ACM, 2018. DOI: `https://doi.org/10.1145/3205455.3205464`.

[52] Alexandra Henzinger, Alexander Noe and Christian Schulz. ILP-based Local Search for Graph Partitioning. In *Proceedings of the 17th Symposium on Experimental Algorithms (SEA)*, volume 103 of LIPIcs, pages 4:1–4:15, 2018. DOI: `https://doi.org/10.4230/LIPIcs.SEA.2018.4`.

[53] Sonja Biedermann, Monika Henzinger, Christian Schulz and Bernhard Schuster. Memetic Graph Clustering. In *Proceedings of the 17th Symposium on Experimental Algorithms (SEA)*, volume 103 of LIPIcs, pages 3:1–3:15, 2018. DOI: `https://doi.org/10.4230/LIPIcs.SEA.2018.3`.

[54] Yaroslav Akhremtsev, Peter Sanders and Christian Schulz. High-Quality Shared-Memory Graph Partitioning. In *Proceedings of the 24th International European Conference on Parallel Computing (Euro-Par)*, volume 11014 of LNCS, pages 659–671, 2018. DOI: `https://doi.org/10.1007/978-3-319-96983-1_47`.

[55] Sebastian Schlag, Matthias Schmitt and Christian Schulz. Faster Support Vector Machines. In *Proceedings of the 21th Workshop on Algorithm Engineering and Experimentation (ALENEX)*, pages 199–210, SIAM, 2019. DOI: `https://doi.org/10.1137/1.9781611975499.16`.

[56] Sebastian Schlag, Christian Schulz, Daniel Seemaier and Darren Strash. Scalable Edge Partitioning. In *Proceedings of the 21th Workshop on Algorithm Engineering and Experimentation (ALENEX)*, pages 211–2225, SIAM, 2019. DOI: `https://doi.org/10.1137/1.9781611975499.17`.

[57] Sebastian Lamm, Christian Schulz, Darren Strash, Robert Williger and Huashuo Zhang. Exactly Solving the Maximum Weight Independent Set Problem on Large Real-World

Graphs. In *Proceedings of the 21th Workshop on Algorithm Engineering and Experimentation (ALENEX)*, pages 144–158, SIAM, 2019. DOI: `https://doi.org/10.1137/1.9781611975499.12`.

[58] Monika Henzinger, Alexander Noe and Christian Schulz. Shared-Memory Exact Minimum Cuts. In *33rd IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pages 13-22, 2019. DOI: `http://doi.org/10.1109/IPDPS.2019.00013`.

[59] Tomas Balyo, Kai Fieger, Dominik Schreiber, Christian Schulz. Finding Optimal Longest Paths by Dynamic Programming in Parallel. In *12th Symposium on Combinatorial Search (SoCS'19)*, pages 61–69, AAAI Press, 2019. DOI: `https://aaai.org/ocs/index.php/SOCS/SOCS19/paper/viewFile/18329/17445`.

[60] Monika Henzinger, Alexander Noe and Christian Schulz. Shared-Memory Branch-and-Reduce for Multiterminal Cuts. In *Algorithm Engineering and Experimentation (ALENEX)*, pages 42–55, 2020. DOI: `https://doi.org/10.1137/1.9781611976007.4`.

[61] Damir Ferizovic, Demian Hespe, Sebastian Lamm, Matthias Mnich, Christian Schulz and Darren Strash. Engineering Kernelization for Maximum Cut. In *Algorithm Engineering and Experimentation (ALENEX)*, pages 27–41, 2020. DOI: `https://doi.org/10.1137/1.9781611976007.3`.

[62] Kathrin Hanauer, Monika Henzinger, and Christian Schulz. Fully Dynamic Single-Source Reachability in Practice: An Experimental Study. In *Algorithm Engineering and Experimentation (ALENEX)*, pages 106–119, 2020. DOI: `https://doi.org/10.1137/1.9781611976007.9`.

[63] Demian Hespe, Sebastian Lamm, Christian Schulz and Darren Strash. WeGotYouCovered: The Solver from the 2019 PACE Implementation Challenge, Vertex Cover Track. In *Combinatorial Scientific Computing (CSC)*, pages 1–11, 2020. DOI: `https://doi.org/10.1137/1.9781611976229.1`.

[64] Marcelo Fonseca Faraj, Alexander van der Grinten, Henning Meyerhenke, Jesper Larsson Träff and Christian Schulz. High-Quality Hierarchical Process Mapping. In *Symposium on Experimental Algorithms (SEA)*, volume 160 of LIPIcs, pages 4:1–4:15, 2020. DOI: `https://doi.org/10.4230/LIPIcs.SEA.2020.4`.

[65] Kathrin Hanauer, Monika Henzinger and Christian Schulz. Faster Fully Dynamic Transitive Closure in Practice. In *Symposium on Experimental Algorithms (SEA)*, volume 160 of LIPIcs, pages 14:1–14:14, 2020. DOI: `https://doi.org/10.4230/LIPIcs.SEA.2020.14`.

[66] Monika Henzinger, Alexander Noe, Christian Schulz and Darren Strash. Finding All Global Minimum Cuts In Practice. In *European Symposium on Algorithms (ESA'20)*, volume 173 of LIPIcs, pages 59:1–59:20, 2020. DOI: `https://doi.org/10.4230/LIPIcs.ESA.2020.59`.

[67] Monika Henzinger, Shahbaz Khan, Richard Paul, Christian Schulz. Dynamic Matching Algorithms in Practice. In *European Symposium on Algorithms (ESA'20)*, volume 173 of LIPIcs, pages 58:1–58:20, 2020. DOI: `https://doi.org/10.4230/LIPIcs.ESA.2020.58`.

[68] Konrad von Kirchbach, Markus Lehr, Sascha Hunold, Christian Schulz, Jesper Larsson Träff. Efficient Process-to-Node Mapping Algorithms for Stencil Computations. In *CLUSTER*, to appear, 2020. **Best Paper Award**.

[69] Gramoz Goranci, Monika Henzinger, Dariusz Leniowski, Christian Schulz, Alexander Svozil. Fully Dynamic k-Center Clustering in Doubling Metrics. In *ALENEX*, to appear, 2021.

[70] Merten Popp, Sebastian Schlag, Christian Schulz and Daniel Seemaier. Multilevel Acyclic Hypergraph Partitioning. In *ALENEX*, to appear, 2021.

[71] Alexander Gellner, Sebastian Lamm, Christian Schulz, Darren Strash, Bogdan Zavalnij. Boosting Data Reduction for the Maximum Weight Independent Set Problem Using Increasing Transformations. In *ALENEX*, to appear, 2021.

[72] Wolfgang Ost, Christian Schulz and Darren Strash. Engineering Data Reduction for Nested Dissection. In *ALENEX*, to appear, 2021.

Workshop Papers and Posters – without proceedings

[69] Roland Glantz, Henning Meyerhenke, Peter Sanders and Christian Schulz. Improving Coarsening for Multilevel Partitioning of Complex Networks. Workshop Paper, The Sixth SIAM Workshop on Combinatorial Scientific Computing, 2014. PDF.

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