Christian Schulz

Curriculum Vitae

Contact Information

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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

April 2025–	AMAZON SCIENCE. Amazon Scholar in Surface Transportation & Sustainability Research
October 2020–	HEIDELBERG UNIVERSITY. 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*
September 2015– February 2016	TU VIENNA / VIENNA PHD SCHOOL OF INFORMATICS. Visiting Professor

Honors and Awards

2025	Amazon Science & Tech All Hands Award: Supply-chain Topology and Routing System
2023	Best Paper Award @ SEA 2023
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

2026 – 2028	Steering Committee Chair Algorithm Engineering and Experiments (ALENEX)
2027	Co-organizer Dagstuhl Meeting On: Graph Algorithms: Making Theoretical Breakthroughs Practical (accepted)
2025–	Co-Organizer Fast Code Seminar Series
2024	SIAG/ACDA Early Career Prize Committee Member
2023	Co-organizer Dagstuhl Meeting On Recent Trends in Graph Decomposition
2022 – 2026	Steering Committee Member European Symposium on Algorithms (ESA/ALGO)
2022 – 2025	Steering Committee Member Symposium on Experimental Algorithms (SEA)
2022 –	Steering Committee Member Parameterized Algorithms and Computational Experiments
2022 – 2024	Associate Editor Transactions on Parallel Computing (TOPC)
2022	Co-organizer SIAM PP Minisymposium On Partitioning and Process Mapping for Emerging Architectures
2022	PC Chair and OC Chair for SEA'22
2022	PC Chair for PACE'22
2021	SIAM ACDA Nominating Committee Member
2021	SIAM Engagement Committee Member
2019	Co-organizer Shonan Meeting On Parameterized graph algorithms & data reduction

Faculty Service

2026 –	DEAN OF STUDIES FOR COMPUTER SCIENCE
2026 –	DELEGATE OF THE FACULTY TO FACHRAT INFORMATIK
2025	EXTERNAL MEMBER OF TENURE COMMITTEE FOR T. BLÄSIUS
2025 –	MEMBER OF EXAMINATION BOARD SCIENTIFIC COMPUTING
2024 –	DELEGATE OF THE FACULTY TO FAKULTÄTENTAG INFORMATIK
2024 –	DELEGATE OF THE FACULTY TO HEIDELBERG SCHOOL OF EDUCATION
2024 –	DEPUTY CHAIR OF THE EQUALITY COMMISSION
2023 –	MEMBER OF STUDY COMMISSION SCIENTIFIC COMPUTING
2021 –	MEMBER OF STUDY COMMISSION COMPUTER SCIENCE
Past:	
2024 – 2026	MEMBER OF ADMISSION COMMITTEE SCIENTIFIC COMPUTING
2024 – 2025	MEMBER OF COMMITTEE FOR W3 PROFESSORSHIP SOFTWARE ENGINEERING, HEIDELBERG
2022 – 2025	DEPUTY MANAGING DIRECTOR INSTITUTE OF COMPUTER SCIENCE HEIDELBERG
2022 – 2024	SENATE CORRESPONDENT COMMITTEE W3 PROFESSORSHIP DEUTSCH ALS FREMDSPRACHENPHILOLOGIE, HEIDELBERG
2022 – 2023	MEMBER OF COMMITTEE FOR W3 PROFESSORSHIP MACHINE LEARNING IN HUMANITIES, HEIDELBERG
2022	MEMBER OF TENURE COMMITTEE FOR F. JOOS
2021	DEPUTY MEMBER OF COMPUTER SCIENCE EXAMINATION BOARD

Grants ($\sum = 2.26$**MM Euro)**

[1] 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.

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

[3] Christian Schulz. Algorithm Engineering for Scalable Data Reduction. DFG application SCHU 2567/3-1. Funded: 324T Euro.

[4] Christian Schulz. Machine Learning for Graph and Hypergraph Clustering Problems (HOMELAND). DAAD (PROCOPE), Support for Travel and International Cooperation. Funded: 6T Euro.

[5] Christian Schulz. Algorithm Engineering for Dynamic and (Re)Streaming Graph Decomposition Algorithms. DFG application SCHU 2567/5-1. Funded: 338T Euro.

[6] Christian Schulz. Engineering Algorithms for Process Mapping at Scale. DFG application SCHU 2567/6-1. Funded: 342T Euro.

[7] Christian Schulz. Engineering Advanced (Hyper)graph b-matching Algorithms. DFG application SCHU 2567/8-1. Funded: 362T Euro.

PC Member for SBAC-PAD'15, HPGDMP'16, ESA'17, IC3'17, IPDPS'18, IC3'18, SNAMS'18, IPEC'19, IPDPS'19, ISC'19, ALENEX'20, CSC'20, SC'20, IPDPS'21, CLUSTER'22, ALENEX'23, ESA'23, SEA'24, Composite AI @ ECAI'24, HOPC'24, ALENEX'25, IPDPS'25, ACDA'25, SC'25, HOPC'25, IPDPS'26, SC'26. *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, ASOC.
Reviewer for Funding Agencies: Deutsche Forschungsgemeinschaft (DFG) and Studienstiftung des deutschen Volkes.

Teaching Experience as Lecturer

2018-25	6xALGORITHMS AND DATA STRUCTURES II (BSc, MSc)
2021-24	3xALGORITHM ENGINEERING
2021-23	3xALGORITHMS AND DATA STRUCTURES I (BSC)
2019-23	2xPARALLEL AND DISTRIBUTED ALGORITHMS
2022-23	INTRODUCTION TO PRACTICAL COMPUTER SCIENCE (BSC)
2019-20	ADVANCED TOPICS IN ALGORITHMS
2018-20	2xNUMERICAL ALGORITHMS
2018	ALGORITHMS AND DATA STRUCTURES (MSC)
2017-18	ADVANCED ALGORITHMS
2014-17	5xGRAPH PARTITIONING AND CLUSTERING
2016	ALGORITHMS II

Open Source Software ($\sum > 1100$ Github Stars)

2024	SCC – SCALABLE CORRELATION CLUSTERING
2024	HEICONNECT – HEIDELBERG CONNECTIVITY AUGMENTATION
2024	HEIORIENT – HEIDELBERG EDGE ORIENTATION
2023	ARC-FLAGTB – PUBLIC TRANSIT ROUTING
2023	HEIDELBERGMOTIFCLUSTERING – LOCAL MOTIF CLUSTERING
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

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), M. Haag (BA), K. Eyubov (BA), F. Hausberger (MA), H. Reinstädtler (MA), R. Erhardt (MA), J. Borowitz (BA), D. Hammer (BA), P. Steil (BA), A. Chhabra (MA), F. Wörner (BA), T. Möller (MA), M. Litzinger (MA), L. Wilwert (BA), S. Heck (MA), F. Walliser (BA), M. Weitz (BA), F. Osyguß (MA), D. Schweisgut (MA), J. Erben (MA), T. Tran (BA), N. Funk (BA), L. Wilwert (MA), M. Dittes (BA), A. Wagner (BA), J. Franz (MA), E. Waldherr (BA), B. Vidic (MA), S. Peretz (BA), L. Baumgärtner (MA), L. Beer (BA), B. Agbere (MA), J. Ternes (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, A. Chhabra, J. Holten, M. Haag, J. Borowitz, P. Steil, D. Schweißgut, F. Walliser, S. Peretz, M. Dittes, J. Erben, A. Wagner, M. Everling

Examiner in PhD Defenses of

M. Hartmann, G. Li, D. Zimmerer, S. Damrich, K. Kades, C. Klein, A. Kleebaum, M. Schellenberg, E. F. Sanmartin, J. Ziegler, V. Bitto, S. C. Pujari, J. Sellner, V. Kiani, S. Seidlitz, L. Ruoying

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, 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..

[6] Manuel Penschuck, Ulrik Brandes, Michael Hamann, Sebastian Lamm, Ulrich Meyer, Ilya Safro, Peter Sanders, and Christian Schulz. Recent Advances in Scalable Network Generation. Book chapter for Massive Graph Analytics, Hall/CRC, 2022.

[7] Christian Schulz, Bora Ucar. Proceedings of 20th International Symposium on Experimental Algorithms, SEA 2022, Heidelberg, Germany, July 25-28, LIPIcs, Volume 233, ISBN 978-3-95977-251-8, 2022. DOI: https://doi.org/10.4230/LIPIcs.SEA.2022.

[8] Ernestine Großmann, Tobias Heuer, Christian Schulz, Darren Strash. The PACE 2022 Parameterized Algorithms and Computational Experiments Challenge: Directed Feedback Vertex Set. In *17th International Symposium on Parameterized and Exact Computation (IPEC 2022)*, LIPIcs, Volume 249, pages 26:1–26:18, 2022. DOI: https://doi.org/10.4230/LIPIcs.IPEC.2022.26.

[9] Faisal Abu-Khzam, Sebastian Lamm, Matthias Mnich, Alexander Noe, Christian Schulz, Darren Strash. Recent Advances in Practical Data Reduction. In *Algorithms for Big Data.*, LNCS, Volume 13201. 2022. DOI: https://doi.org/10.1007/978-3-031-21534-6_6.

[10] George Karypis, Christian Schulz, Darren Strash and Deepak Ajwani, Rob H. Bisseling, Katrin Casel, Ümit V. Çatalyürek, Cédric Chevalier, Florian Chudigiewitsch, Marcelo Fonseca Faraj, Michael Fellows, Lars Gottesbüren, Tobias Heuer, Kamer Kaya, Jakub Lacki, Xiaoye Sherry Li, Ruben Mayer, Johannes Meintrup, Yosuke Mizutani, François Pellegrini, Fabrizio Petrini, Frances Rosamond, Ilya Safro, Sebastian Schlag, Roohani Sharma, Blair D. Sullivan, Bora Uçar, Albert-Jan Yzelman. Recent Trends in Graph Decomposition. Dagstuhl Reports, Volume 13, Issue 8, 2024. DOI: https://doi.org/10.4230/DagRep.13.8.1.

Journal Articles

[11] 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.

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

[13] 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.

[14] 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.

[15] 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.

[16] 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.

[17] 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.

[18] 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.

[19] 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.

[20] 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.

[21] 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.

[22] Alexandra Henzinger, Alexander Noe and Christian Schulz. ILP-based Local Search for Graph Partitioning. In *ACM Journal of Experimental Algorithms (ACM JEA)*, Volume 25, Article No. 1.9, 2020. DOI: https://doi.org/10.1145/3398634.

[23] 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.

[24] Christian Schulz, Jesper Larsson Träff and Konrad von Kirchbach. Better Process Mapping and Sparse Quadratic Assignment. In *ACM Journal of Experimental Algorithms (ACM JEA)*, Volume 25, Article No 1.11, 2020. DOI: https://doi.org/10.1145/3409667.

[25] Orlando Moreira, Merten Popp and Christian Schulz. Evolutionary Multi-Level Acyclic Graph Partitioning. In *ACM Journal of Heuristics*, Volume 29, pages 771–799, 2020. DOI: https://doi.org/10.1007/s10732-020-09448-8.

[26] Sherif Sakr, Angela Bonifati, Hannes Voigt, Alexandru Iosup, Khaled Ammar, Renzo Angles, Walid Aref, Marcelo Arenas, Maciej Besta, Peter A. Boncz, Khuzaima Daudjee, Emanuele Della Valle, Stefania Dumbrava, Olaf Hartig, Bernhard Haslhofer, Tim Hegeman, Jan Hidders, Katja Hose, Adriana Iamnitchi, Vasiliki Kalavri, Hugo Kapp, Wim Martens, M. Tamer Özsu, Eric Peukert, Stefan Plantikow, Mohamed Ragab, Matei R. Ripeanu, Semih Salihoglu, Christian Schulz, Petra Selmer, Juan F. Sequeda, Joshua Shinavier, Gábor Szárnyas, Riccardo Tommasini, Antonino Tumeo, Alexandru Uta, Ana Lucia Varbanescu, Hsiang-Yun Wu, Nikolay Yakovets, Da Yan, Eiko Yoneki. The Future is Big Graphs! A Community View on Graph Processing Systems. In *Communictions of ACM (CACM)*, Volume 64, No. 9, pages 62–71, 2021. DOI: https://doi.org/10.1145/3434642.

[27] Sebastian Schlag, Matthias Schmitt and Christian Schulz. Faster Support Vector Machines. In *ACM Journal of Experimental Algorithms (ACM JEA)*, Volume 26, Article No. 15, pages 1–21, 2021. DOI: https://doi.org/10.1145/3484730.

[28] Marcelo Fonseca Faraj and Christian Schulz. Buffered Streaming Graph Partitioning. In *ACM Journal of Experimental Algorithms (ACM JEA)*, Volume 27, Article No. 1.10, pages 1–26, 2022. DOI: https://doi.org/10.1145/3546911.

[29] Kathrin Hanauer, Christian Schulz and Jonathan Trummer. O'Reach: Even Faster Reachability in Large Graphs. Invited to special issue of *ACM Journal of Experimental Algorithms (ACM JEA) for SEA 2021*, Volume 27, Article No. 4.2, pages 1–27, 2022. DOI: https://doi.org/10.1145/3556540.

[30] Kathrin Hanauer, Monika Henzinger, Christian Schulz. Recent Advances in Fully Dynamic Graph Algorithms – A Quick Reference Guide. In *ACM Journal of Experimental Algorithms (ACM JEA)*, Volume 27, Article No. 1.11, pages 1–45, 2022. DOI: https://dl.acm.org/doi/10.1145/3555806.

[31] Sebastian Schlag, Tobias Heuer, Lars Gottesbüren, Yaroslav Akhremtsev, Christian Schulz, Peter Sanders. High-Quality Hypergraph Partitioning. In *ACM Journal of Experimental Algorithms (ACM JEA)*, Volume 27, Article No. 1.9, pages 1–39, 2023. DOI: https://doi.org/10.1145/3529090.

[32] Umit Catalyurek, Karen Devin, Marcelo Fonseca Faraj, Lars Gottesbüren, Tobias Heuer, Henning Meyerhenke, Peter Sanders, Sebastian Schlag, Christian Schulz, Daniel Seemaier and Dorothea Wagner. More Recent Advances in Graph Partitioning. In *ACM Computing Surveys*, Volume 55, Issue 12, Article No. 253, pages 1–38, 2023. DOI: https://doi.org/10.1145/3571808.

[33] Ernestine Großmann, Sebastian Lamm, Christian Schulz and Darren Strash. Finding Near-Optimal Weight Independent Sets at Scale. In *Journal of Graph Algorithms and Applications*, Volume 28, Number 1, pages 439–471, 2024. DOI: https://doi.org/10.7155/jgaa.v28i1.2997.

[34] Kamal Eyubov, Marcelo Fonseca Faraj and Christian Schulz. FREIGHT: Fast Streaming Hypergraph Partitioning. In *Algorithmica*, 2025, DOI: https://doi.org/10.1007/s00453-024-01291-8..

[35] Jannick Borowitz, Ernestine Großmann, Christian Schulz, Dominik Schweisgut. Finding Optimal 2-Packing Sets on Arbitrary Graphs at Scale. In *Joural of Graph Algorithms and Applications*, 2025. To appear.

[36] Ernestine Großmann, Jonas Sauer, Christian Schulz, Patrick Steil, Sascha Witt. FLASH-TB: Integrating Arc-Flags and Trip-Based Public Transit Routing In *Transportation Science*, 2025.

[37] Jannick Borowitz, Ernestine Großmann, Christian Schulz. Finding Weight 2-Packing Sets on Arbitrary Graphs at Scale. In *Networks*, 2026. To appear.

[38] Ernestine Großmann, Felix Joos, Henrik Reinstädtler, Christian Schulz. Engineering Hypergraph *b*-Matching Algorithms. In *Journal of Graph Algorithms and Applications*, 2026. To appear.

Conference Articles

[39] 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.

[40] 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.

[41] 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.

[42] 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.

[43] 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.

[44] 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.

[45] 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.

[46] 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.

[47] 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.

[48] 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.

[49] 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.

[50] 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.

[51] 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.

[52] 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.

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