

Sebastian Schlag

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PROFESSIONAL EXPERIENCE	Apple Inc. , Cupertino, United States	
	▪ Staff Software Development Engineer, Maps Navigation	Apr. 2025 – present
	▪ Senior Software Development Engineer, Maps Navigation	Sep. 2021 – Apr. 2025
	▪ Software Development Engineer, Maps Navigation	Jul. 2021 – Sep. 2021
	Apple Technology Services B.V. & Co. KG , München, Germany	
	▪ Software Development Engineer, Maps Navigation	Apr. 2020 – Jul. 2021
EDUCATION	Karlsruhe Institute of Technology , Karlsruhe, Germany	
	▪ (Post)Doctoral Researcher, Institute of Theoretical Informatics	Oct. 2013 – Mar. 2020
	SAP SE , Walldorf, Germany	
	▪ Thesis Student	Dec. 2012 – Jul. 2013
	▪ Working Student	Oct. 2010 – Jun. 2012
	▪ Cooperative Studies	Sep. 2007 – Sep. 2010
AWARDS	Karlsruhe Institute of Technology , Karlsruhe, Germany	
	▪ Dr. rer. nat. in Computer Science / Algorithm Engineering	Oct. 2013 – Dec. 2019
	• Grade: summa cum laude	
	▪ M.Sc. in Computer Science	Oct. 2010 – Jul. 2013
	• GPA*: 1.1 (with distinction)	
	Baden-Württemberg Cooperative State University , Karlsruhe, Germany	
▪ B.Sc. in Applied Computer Science	Sep. 2007 – Sep. 2010	
• GPA*: 1.2		
OPEN SOURCE SOFTWARE	Software Development Award , DFG SPP 1736: Algorithms for BIG DATA	Sep. 2018
	▪ Awarded for the prominent role in the development of KaHyPar	
PUBLICATIONS	KaHyPar - Karlsruhe Hypergraph Partitioning , http://www.kahypar.org/	
	▪ A high-quality multi-level hypergraph partitioning framework	
Conference Articles		
[1] L. Gottesbüren, T. Heuer, P. Sanders, S. Schlag “Shared-Memory n-level Hypergraph Partitioning”, in <i>SIAM Symposium on Algorithm Engineering and Experiments (ALENEX)</i> , Jan. 2022.		
[2] T. Heuer, N. Mass, S. Schlag, “Multilevel Hypergraph Partitioning with Vertex Weights Revisited”, in <i>19th Symposium on Experimental Algorithms (SEA)</i> , Jun. 2021.		
[3] M. Popp, S. Schlag, C. Schulz, D. Seemaier, “Multilevel Acyclic Hypergraph Partitioning”, in <i>SIAM Symposium on Algorithm Engineering and Experiments (ALENEX)</i> , Jan. 2021.		
[4] L. Gottesbüren, T. Heuer, P. Sanders, S. Schlag, “Scalable Shared-Memory Hypergraph Partitioning”, in <i>SIAM Symposium on Algorithm Engineering and Experiments (ALENEX)</i> , Jan. 2021.		
[5] L. Gottesbüren, M. Hamann, S. Schlag, D. Wagner, “Advanced Flow-Based Multilevel Hypergraph Partitioning”, in <i>18th Symposium on Experimental Algorithms (SEA)</i> , Jun. 2020.		
[6] I. Baar, L. Hübner, P. Oettig, A. Zapletal, S. Schlag, A. Stamatakis, B. Morel, “Data Distribution for Phylogenetic Inference with Site Repeats via Judicious Hypergraph Partitioning”, in <i>IEEE International Parallel and Distributed Processing Symposium Workshops</i> , May. 2019.		
[7] S. Schlag, M. Schmitt, C. Schulz, “Faster Support Vector Machines”, in <i>Proceedings of the 21st Workshop on Algorithm Engineering and Experiments (ALENEX)</i> , Jan. 2019.		
[8] S. Schlag, C. Schulz, D. Seemaier, D. Strash, “Scalable Edge Partitioning”, in <i>Proceedings of the 21st Workshop on Algorithm Engineering and Experiments (ALENEX)</i> , Jan. 2019.		
[9] R. Andre, S. Schlag, C. Schulz, “Memetic Multilevel Hypergraph Partitioning”, in <i>Proceedings of the Genetic and Evolutionary Computation Conference (GECCO)</i> , Jul. 2018.		

*Germany uses a 6-point grading system, where 1 represents very good, 4 sufficient, and 6 inadequate.

- [10] T. Heuer, P. Sanders, S. Schlag, “Network Flow-Based Refinement for Multilevel Hypergraph Partitioning”, in *17th Symposium on Experimental Algorithms (SEA)*, Jun. 2018.
- [11] T. Heuer, S. Schlag, “Improving Coarsening Schemes for Hypergraph Partitioning by Exploiting Community Structure”, in *16th Symposium on Experimental Algorithms (SEA)*, Jun. 2017.
- [12] Y. Akhremtsev, T. Heuer, P. Sanders, S. Schlag, “Engineering a direct k-way Hypergraph Partitioning Algorithm”, in *Proceedings of the 19th Workshop on Algorithm Engineering and Experiments (ALENEX)*, Jan. 2017.
- [13] T. Bingmann, M. Axtmann, E. Jöbstl, S. Lamm, H. Nguyen, A. Noe, S. Schlag, M. Stumpp, T. Sturm, P. Sanders, “Thrill: High-Performance Algorithmic Distributed Batch Data Processing with C++”, in *Proceedings of the 2016 IEEE International Conference on Big Data*, Dec. 2016.
- [14] S. Schlag, V. Henne, T. Heuer, H. Meyerhenke, P. Sanders, C. Schulz, “k-way Hypergraph Partitioning via n-Level Recursive Bisection”, in *Proceedings of the 18th Workshop on Algorithm Engineering and Experiments (ALENEX)*, Jan. 2016.
- [15] P. Sanders, S. Schlag, I. Müller, “Communication Efficient Algorithms for Fundamental Big Data Problems”, in *Proceedings of the 2013 IEEE International Conference on Big Data*, Oct. 2013.

Journal Articles

- [16] G. Karypis, C. Schulz, D. Strash, D. Ajwani, R. H. Bisseling, K. Casel, Ü. V. Çatalyürek, C. Chevalier, F. Chudigiewitsch, M. Fonseca Faraj, M. Fellows, L. Gottesbüren, T. Heuer, K. Kaya, J. Lacki, J. Langguth, X. Sherry Li, R. Mayer, J. Meintrup, Y. Mizutani, F. Pellegrini, F. Petrini, F. Rosamond, I. Safro, S. Schlag, R. Sharma, B. D. Sullivan, B. Uçar, A.-Jan Yzelman, “Recent Trends in Graph Decomposition (Dagstuhl Seminar 23331)”, in *Dagstuhl Reports*, Mar. 2024.
- [17] L. Gottesbüren, T. Heuer, N. Maas, P. Sanders, S. Schlag, “Scalable High-Quality Hypergraph Partitioning”, in *ACM Transactions on Algorithms*, Sep. 2023.
- [18] Ü. V. Çatalyürek, K. D. Devine, M. Fonseca Faraj, L. Gottesbüren, T. Heuer, H. Meyerhenke, P. Sanders, S. Schlag, C. Schulz, D. Seemaier, D. Wagner, “More Recent Advances in (Hyper)Graph Partitioning”, in *ACM Computing Surveys*, Nov. 2022.
- [19] S. Schlag, T. Heuer, L. Gottesbüren, Y. Akhremtsev, C. Schulz, P. Sanders, “High-Quality Hypergraph Partitioning”, in *ACM Journal of Experimental Algorithmics (JEA)*, Apr. 2022.
- [20] S. Schlag, M. Schmidt, C. Schulz, “Faster Support Vector Machines”, in *ACM Journal of Experimental Algorithmics (JEA)*, Oct. 2021.
- [21] T. Heuer, P. Sanders, S. Schlag, “Network Flow-Based Refinement for Multilevel Hypergraph Partitioning”, in *ACM Journal of Experimental Algorithmics (JEA)*, Dec. 2019.

Dissertation and Theses

- [22] S. Schlag, “High-Quality Hypergraph Partitioning”, *PhD thesis*, Karlsruhe Institute of Technology, Feb. 2020.
- [23] S. Schlag, “Distributed Duplicate Removal”, *Master thesis*, Karlsruhe Institute of Technology, 2013.
- [24] S. Schlag, “Transportation Management in the Cloud – A Prototype for Tendering-Scenarios”, *Bachelor thesis*, Baden-Württemberg Cooperative State University, 2010.

Workshop Papers and Posters without Proceedings

- [25] J. Langguth, S. Schlag, C. Schulz, “Load-Balanced Bottleneck Objectives in Process Mapping”, in *9th SIAM Workshop on Combinatorial Scientific Computing*, Feb. 2020.
- [26] S. Schlag, “High-Quality (Hyper-)Graph Partitioning”, in *Scientific Review: Research Field Key Technologies – Information*, Dec. 2017.

INVITED TALKS & WORKSHOPS

- [1] “High-Quality (Hyper)Graph Partitioning”, *International Congress on Industrial and Applied Mathematics (ICIAM) · Combinatorial Scientific Computing*, Valencia, Spain, Jul. 2019.
- [2] Dagstuhl Seminar (No. 23331): Recent Trends in Graph Decomposition, Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Germany, Aug. 2023.
- [3] “Modern Hypergraph Partitioning: KaHyPar, Mt-KaHyPar, and Beyond”, *International Symposium on Physical Design (ISPD)*, Bonn, Germany, Mar. 2026.

ACADEMIC SERVICE

External Reviewer

- **Conferences:** ESA’16, HiPC’16, ESA’18, IPDPS’18

- **Journals:** ACM Journal of Experimental Algorithmics, IEEE Transactions on Knowledge and Data Engineering, ACM Transactions on Parallel Computing, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Information Sciences, Systems Architecture, Cluster Computing, Computers & Operations Research, Computer Science Review, Algorithmica
- **Book Chapters:** Algorithm Engineering: Selected Results and Surveys

Program Committee

- **Conferences:** ALENEX'22, SEA'22