

Publikationsliste

Die Autorenlisten der einzelnen Einträge sind entsprechend der Konvention im Bereich der Algorithmik alphabetisch nach Nachnamen sortiert aufgeführt.

Veröffentlichungen

- [1] Sándor Fekete, Ramin Kosfeld, Peter Kramer, Jonas Neutzner, Christian Rieck, and Christian Scheffer. Maneuvering through narrow corridors: Coordinated motion planning in simple domains. In *Proceedings of the 35th International Symposium on Algorithms and Computation (ISAAC)*, 2024. Angenommen.
- [2] Sándor P. Fekete, Joseph S.B. Mitchell, Christian Rieck, Christian Scheffer, and Christiane Schmidt. Dispersive vertex guarding for simple and non-simple polygons. In *Proceedings of the 36st Annual Canadian Conference on Computational Geometry (CCCG)*, 2024. Angenommen.
- [3] Philipp Kather and Christian Scheffer. Lessons learned from integrating a metaverse app into a cs math course to increase commuter student participation. In *Proceedings of 1st ACM Virtual Global Computing Education Conference*, 2024.
- [4] Christian Rieck and Christian Scheffer. The dispersive art gallery problem. *JoCG*, 2024. Special Issue of ISAAC 2022.
- [5] Sándor P. Fekete, Peter Kramer, Christian Rieck, Christian Scheffer, and Arne Schmidt. Efficiently reconfiguring a connected swarm of labeled robots. *Auton. Agents Multi Agent Syst.*, 2024.
- [6] Sándor P. Fekete, Dominik Krupke, Michael Perk, Christian Rieck, and Christian Scheffer. The lawn mowing problem: From algebra to algorithms. In *30th Annual European Symposium on Algorithms, ESA*, 2023.
- [7] Sándor P. Fekete, Dominik Krupke, Michael Perk, Christian Rieck, and Christian Scheffer. A closer cut: Computing near-optimal lawn mowing tours. In *Proceedings of the Twenty-Fifth Workshop on Algorithm Engineering and Experiments, ALENEX*, 2023. Best Paper Award <https://evoq-eval.siam.org/conferences/cm/program/special-events/alenex23-special-events>.
- [8] Sándor P. Fekete, Utkarsh Gupta, Phillip Keldenich, Christian Scheffer, and Sahil Shah. Worst-case optimal covering of rectangles by disks. *Discrete & Computational Geometry*, 2023. Angenommen.

- [9] Sàndor Fekete, Christian Rieck, Philipp Keldenich, Ramin Kosfeld, and Christian Scheffer. Connected coordinated motion planning with bounded stretch. *Autonomous Agents and Multi-Agent Systems*, 2023. Angenommen.
- [10] Sàndor P. Fekete, Phillip Keldenich, and Christian Scheffer. Packing disks into disks with optimal worst-case density. *Discret. Comput. Geom.*, 2023.
- [11] Sàndor P. Fekete, Peter Kramer, Christian Rieck, Christian Scheffer, and Arne Schmidt. Efficiently reconfiguring a connected swarm of labeled robots. In *Proceedings of the 33rd International Symposium on Algorithms and Computation (ISAAC)*, 2022. Angenommen.
- [12] Christian Rieck and Christian Scheffer. The dispersive art gallery problem. In *Proceedings of the 33rd International Symposium on Algorithms and Computation (ISAAC)*, 2022. Angenommen.
- [13] Sàndor Fekete, Vijaykrishna Gurunathan, Kushagra Juneja, Phillip Keldenich, Linda Kleist, and Christian Scheffer. Worst-case optimal squares packing into disks. *JoCG*, 2022. Special Issue of SoCG 2021, Angenommen.
- [14] Sàndor Fekete, Eike Niehs, Christian Scheffer, and Arne Schmidt. Connected reconfiguration of lattice-based cellular structures by finite-memory robots. *Algorithmica*, 2022. Angenommen.
- [15] Sàndor Fekete, Vijaykrishna Gurunathan, Kushagra Juneja, Phillip Keldenich, Linda Kleist, and Christian Scheffer. Worst-case optimal squares packing into disks. In *Proceedings of the 37th International Symposium on Computational Geometry (SoCG)*, 2021. Angenommen.
- [16] Sàndor P. Fekete, Phillip Keldenich, Rahmin Kosfeld, Christian Rieck, and Christian Scheffer. Connected coordinated motion planning with bounded stretch. In *Proceedings of the 32nd International Symposium on Algorithms and Computation (ISAAC)*, 2021. Angenommen.
- [17] Jakob Keller, Christian Rieck, Christian Scheffer, and Arne Schmidt. Particle-based assembly using precise global control. In *Proceedings of the 17th International Symposium on Algorithms and Data Structures (WADS)*, 2021. Angenommen.
- [18] Christian Scheffer. The Prefix Fréchet Similarity. *Comput. Geom.*, 2021. Angenommen.
- [19] Sàndor P. Fekete, Phillip Keldenich, and Christian Scheffer. Covering rectangles by disks: The video. In *Proceedings of the 36th International Symposium on Computational Geometry (SoCG)*, 2020. <https://www.youtube.com/watch?v=pJRsfZP5WmE>.
- [20] Amira Abdel-Rahman, Aaron T. Becker, Daniel E. Biediger, Kenneth Cheung, Sàndor P. Fekete, Neil Gershenfeld, Sabrina Hugo, Benjamin Jenett, Phillip Keldenich, Eike Niehs, Christian Rieck, Arne Schmidt, Christian Scheffer, and Mike Yannuzzi. Space ants: Constructing and reconfiguring large-scale structures with finite automata. In *Proceedings of the 36th International Symposium on Computational Geometry (SoCG)*, 2020. <https://www.youtube.com/watch?v=12j7G1TXKEo>.

- [21] Sándor P. Fekete, Utkarsh Gupta, Phillip Keldenich, Christian Scheffer, and Sahil Shah. Worst-case optimal covering of rectangles by disks. In *Proceedings of the 36th International Symposium on Computational Geometry (SoCG)*, 2020. Angenommen.
- [22] Sándor P. Fekete, Robert Gmyr, Sabrina Hugo, Phillip Keldenich, Christian Scheffer, and Arne Schmidt. Cadbots: Algorithmic aspects of manipulating programmable matter with finite automata. *Algorithmica*, 2020. Angenommen.
- [23] Sándor Fekete, Eike Niehs, Christian Scheffer, and Arne Schmidt. Connected reconfiguration of lattice-based cellular structures by finite-memory robots. In *Proceedings of the 16th International Symposium on Algorithms for Sensor Systems and Experiments for Wireless Sensor Networks, (ALGOSENSORS)*, 2020. Angenommen.
- [24] Amira Abdel-Rahman, Aaron T. Becker, Daniel E. Biediger, Kenneth C. Cheung, Sándor P. Fekete, Benjamin Jenett, Eike Niehs, Christian Scheffer, Arne Schmidt, and Mike Yannuzzi. Recognition and reconfiguration of lattice-based cellular structures by simple robots. In *Proceedings of the International Conference on Robotics and Automation (ICRA)*, 2020. Angenommen.
- [25] Christian Scheffer. Train Scheduling: Hardness and Algorithms. In *Proceedings of the 14th International Conference and Workshops on Algorithms and Computation (WALCOM)*, 2020. Angenommen.
- [26] Christian Scheffer. Scheduling Three Trains is NP-Complete. In *Proceedings of the 32nd Annual Canadian Conference on Computational Geometry (CCCG)*, 2020. Angenommen.
- [27] Sándor P. Fekete, Vijaykrishna Gurunathan, Kushagra Juneja, Phillip Keldenich, Linda Kleist, and Christian Scheffer. Packing squares into a disk with optimal worst-case density. In *Proceedings of the 36th European Workshop on Computational Geometry (EuroCG)*, 2020.
- [28] Sándor P. Fekete, Ramin T. Kosfeld, Christian Rieck, and Christian Scheffer. Connected coordinated motion planning. In *Proceedings of the 36th European Workshop on Computational Geometry (EuroCG)*, 2020. Angenommen.
- [29] Amira Abdel-Rahman, Aaron T. Becker, Daniel E. Biediger, Kenneth C. Cheung, Sándor P. Fekete, Benjamin Jenett, Eike Niehs, Christian Scheffer, Arne Schmidt, and Mike Yannuzzi. Recognition and reconfiguration of lattice-based cellular structures by simple robots. In *Proceedings of the 36th European Workshop on Computational Geometry (EuroCG)*, 2020. Angenommen.
- [30] Sándor P. Fekete, Andreas Haas, Yannic Lieder, Eike Niehs, Michael Perk, Victoria Sack, and Christian Scheffer. Hard instances of the minimum-weight triangulation problem. In *Proceedings of the 36th European Workshop on Computational Geometry (EuroCG)*, 2020. Angenommen.

- [31] Sándor P. Fekete, Utkarsh Gupta, Phillip Keldenich, Christian Scheffer, and Sahil Shah. Worst-case optimal covering of rectangles by disks. In *Proceedings of the 36th European Workshop on Computational Geometry (EuroCG)*, 2020. Angenommen.
- [32] Sándor P. Fekete, Phillip Keldenich, and Christian Scheffer. Packing disks into disks with optimal worst-case density. In *Proceedings of the 35th International Symposium on Computational Geometry (SoCG)*, pages 35:1–35:19, 2019.
- [33] Aaron T. Becker, Sándor P. Fekete, Phillip Keldenich, and Christian Scheffer. Packing geometric objects with optimal worst-case density. In *Proceedings of the 35th International Symposium on Computational Geometry (SoCG)*, pages 63:1–63:6, 2019. <https://www.youtube.com/watch?v=QpyjB8c4Ngk>.
- [34] Christian Scheffer. The Prefix Fréchet Similarity. In *Proceedings of the 13th International Conference and Workshops on Algorithms and Computation (WALCOM)*, pages 96–107, 2019.
- [35] Sándor P. Fekete, Sven von Höveling, and Christian Scheffer. Online circle packing. In *Proceedings of the 16th International Symposium on Algorithms and Data Structures (WADS)*, pages 366–379, 2019.
- [36] Erik D. Demaine, Sándor P. Fekete, Phillip Keldenich, Henk Meijer, and Christian Scheffer. Coordinated Motion Planning: Coordinating a Swarm of Labeled Robots with Bounded Stretch. *SIAM Journal on Computing*, 48(6):1727–1762, 2019.
- [37] Sándor P. Fekete, Sebastian Morr, and Christian Scheffer. Split packing: Algorithms for packing circles with optimal worst-case density. *Discrete & Computational Geometry*, 61(3):562–594, 2019.
- [38] Christian Scheffer and Jan Vahrenhold. Approximate Shortest Distances among Smooth Obstacles in 3d. *JoCG*, 10(1):389–422, 2019.
- [39] Christian Scheffer. *Continuously Coordinating Geometric Degrees of Freedom: New Aspects and Approaches*. Habilitationsschrift, Technische Universität Braunschweig, 2019.
- [40] Sándor P. Fekete, Phillip Keldenich, and Christian Scheffer. Packing Disks into Disks with Optimal Worst-Case. In *Proceedings of the 35th European Workshop on Computational Geometry (EuroCG)*, pages 49:1–49:8, 2019.
- [41] Zachary Abel, Victor Alvarez, Erik D. Demaine, Sándor P. Fekete, Aman Gour, Adam Hesterberg, Phillip Keldenich, and Christian Scheffer. Conflict-free coloring of graphs. *SIAM J. Discrete Math.*, 32(4):2675–2702, 2018.
- [42] Sándor P. Fekete, Robert Gmyr, Sabrina Hugo, Phillip Keldenich, Christian Scheffer, and Arne Schmidt. Cadbots: Algorithmic aspects of manipulating programmable matter with finite automata. In *Proceedings of the 13th International Workshop on the Algorithmic Foundations of Robotics (WAFR)*, 2018. Angenommen.

- [43] Erik D. Demaine, S  ndor P. Fekete, Phillip Keldenich, Christian Scheffer, and Henk Meijer. Coordinated motion planning: Reconfiguring a swarm of labeled robots with bounded stretch. In *Proceedings of the 34th International Symposium on Computational Geometry, (SoCG)*, pages 29:1–29:15, 2018.
- [44] Aaron T. Becker, S  ndor P. Fekete, Phillip Keldenich, Lillian Lin, and Christian Scheffer. Coordinated motion planning: The video. In *Proceedings of the 34th International Symposium on Computational Geometry (SoCG)*, pages 74:1–74:5, 2018. <https://youtu.be/00rG72sX5gk>.
- [45] S  ndor P. Fekete, Sven von H  veling, Joseph S. B. Mitchell, Christian Rieck, Christian Scheffer, Arne Schmidt, and James R. Zuber. Don't rock the boat: Algorithms for balanced dynamic loading and unloading. In *Proceedings of the 13th Latin American Symposium on Theoretical Informatics (LATIN)*, pages 448–460, 2018.
- [46] Amin Gheibi, Anil Maheshwari, J  rg-R  diger Sack, and Christian Scheffer. Path refinement in weighted regions. *Algorithmica*, 80(12):3766–3802, 2018.
- [47] Aaron T. Becker, S  ndor P. Fekete, Phillip Keldenich, Dominik Krupke, Christian Rieck, Christian Scheffer, and Arne Schmidt. Tilt Assembly: Algorithms for Micro-Factories that Build Objects with Uniform External Forces. *Algorithmica*, 2018.
- [48] Anil Maheshwari, J  rg-R  diger Sack, and Christian Scheffer. Approximating the Integral Fr  chet Distance. *Comput. Geom.*, 70:13–30, 2018.
- [49] S  ndor P. Fekete, Qian Li, Joseph S. B. Mitchell, and Christian Scheffer. Universal guard problems. *Int. J. Comput. Geometry Appl.*, 28(2):129–160, 2018.
- [50] S  ndor P. Fekete, Sven von H  veling, Joseph S. B. Mitchell, Christian Rieck, Christian Scheffer, Arne Schmidt, and James R. Zuber. Don't Rock the Boat: Algorithms for Balanced Dynamic Loading and Unloading. In *Proceedings of the 34th European Workshop on Computational Geometry (EuroCG)*, pages 18:1–18:6, 2018.
- [51] Zachary Abel, Victor Alvarez, Erik D. Demaine, S  ndor P. Fekete, Aman Gour, Adam Hesterberg, Phillip Keldenich, and Christian Scheffer. Three colors suffice: Conflict-free coloring of planar graphs. In *Proceedings of the 28th ACM-SIAM Symposium on Discrete Algorithms (SODA)*, pages 1951–1963, 2017.
- [52] S  ndor P. Fekete, Sebastian Morr, and Christian Scheffer. Split Packing: Packing Circles into Triangles with Optimal Worst-Case density. In *Proceedings of the 15th International Symposium on Algorithms and Data Structures (WADS)*, pages 373–384, 2017.
- [53] Aaron T. Becker, S  ndor P. Fekete, Phillip Keldenich, Dominik Krupke, Christian Rieck, Christian Scheffer, and Arne Schmidt. Tilt assembly: Algorithms for micro-factories that build objects with uniform external forces. In *Proceedings of the 28th International Symposium on Algorithms and Computation (ISAAC)*, pages 11:1–11:13, 2017.

- [54] Alexander Dörflinger, Sándor P. Fekete, Björn Fiethe, Phillip Keldenich, Harald Michalik, and Christian Scheffer. Resource-Efficient Dynamic Partial Reconfiguration on FPGAs for Space Instruments. In *Proceedings of NASA/ESA Conference on Adaptive Hardware and Systems (AHS)*, pages 24–31, 2017.
- [55] Erik D. Demaine, Sándor P. Fekete, Christian Scheffer, and Arne Schmidt. New Geometric Algorithms for Fully Connected Staged Self-Assembly. *Theor. Comput. Sci.*, 671:4–18, 2017.
- [56] Sándor P. Fekete, Jan-Marc Reinhardt, and Christian Scheffer. An Efficient Data Structure for Dynamic Two-Dimensional Reconfiguration. *Journal of Systems Architecture - Embedded Systems Design*, 75:15–25, 2017.
- [57] Erik D. Demaine, Sándor P. Fekete, Phillip Keldenich, Henk Meijer, and Christian Scheffer. Parallel Motion Planning: Coordinating a Swarm of Labeled Robots with Bounded Stretch. In *Proceedings of the 33rd European Workshop on Computational Geometry (EuroCG)*, pages 5–8, 2017.
- [58] Sándor P. Fekete, Christian Rieck, and Christian Scheffer. On the Traveling Salesman Problem in Solid Grid Graphs. In *Proceedings of the 33rd European Workshop on Computational Geometry (EuroCG)*, pages 53–56, 2017.
- [59] Christian Scheffer. Near-Linear Time Medial Axis Approximation of Smooth Curves in \mathbb{R}^3 . *JoCG*, 7(1):360–429, 2016.
- [60] Christian Scheffer. More Flexible Curve Matching via the Partial Fréchet Similarity. *Int. J. Comput. Geometry Appl.*, 26(1):33–52, 2016.
- [61] Christian Scheffer and Jan Vahrenhold. Approximate Shortest Distances Among Smooth Obstacles in 3D. In *Proceedings of the 27th International Symposium on Algorithms and Computation (ISAAC)*, pages 60:1–60:13, 2016.
- [62] Sándor P. Fekete, Qian Li, Joseph S. B. Mitchell, and Christian Scheffer. Universal Guard Problems. In *Proceedings of the 27th International Symposium on Algorithms and Computation (ISAAC)*, pages 32:1–32:13, 2016.
- [63] Anil Maheshwari, Jörg-Rüdiger Sack, and Christian Scheffer. Approximating the Integral Fréchet Distance. In *Proceedings of the 15th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT)*, pages 26:1–26:14, 2016.
- [64] Sándor P. Fekete, Jan-Marc Reinhardt, and Christian Scheffer. An Efficient Data Structure for Dynamic Two-Dimensional Reconfiguration. In *Proceedings of 29th International Conference on Architecture of Computing Systems (ARCS)*, pages 306–318, 2016.
- [65] Sàndor P. Fekete, Joseph S. B. Mitchell, Qian Li, and Christian Scheffer. Universal Guards: Guarding All Polygonalizations of a Point Set in the Plane. In *Proceedings of the fifth Young Researchers Forum (YRF)*, pages 7–8, 2016.

- [66] Erik D. Demaine, Sándor P. Fekete, Christian Scheffer, and Arne Schmidt. New Geometric Algorithms for Fully Connected Staged Self-Assembly. In *Proceedings of 21st International Conference on Computing and Molecular Programming (DNA)*, pages 104–116, 2015.
- [67] Christian Scheffer and Jan Vahrenhold. Subquadratic Medial-Axis Approximation in \mathbb{R}^3 . *JoCG*, 6(1):249–287, 2015.
- [68] Christian Scheffer. Subquadratic Medial-Axis Approximation for Smooth Curves in \mathbb{R}^3 . In *Proceedings of the 31st European Workshop on Computational Geometry (EuroCG)*, pages 101–104, 2015.
- [69] Amin Gheibi, Anil Maheshwari, Jörg-Rüdiger Sack, and Christian Scheffer. Minimum Backward Fréchet Distance. In *Proceedings of the 22nd ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, pages 381–388, 2014.
- [70] Christian Scheffer. *Approximation algorithms for geometrical distance problems that are not solvable exactly*. Dissertation, Universität Münster, 2014.
- [71] Christian Scheffer and Jan Vahrenhold. Approximating Geodesic Distances on 2-Manifolds in \mathbb{R}^3 . *Comput. Geom.*, 47(2):125–140, 2014.
- [72] Christian Scheffer and Jan Vahrenhold. Approximating Geodesic Distances on 2-Manifolds in \mathbb{R}^3 : The Weighted Case. *Comput. Geom.*, 47(8):789–808, 2014.
- [73] Jean-Lou De Carufel, Amin Gheibi, Anil Maheshwari, Jörg-Rüdiger Sack, and Christian Scheffer. Similarity of Polygonal Curves in the Presence of Outliers. *Comput. Geom.*, 47(5):625–641, 2014.
- [74] Christian Scheffer and Jan Vahrenhold. Approximating Weighted Geodesic Distances on 2-Manifolds in \mathbb{R}^3 . In *Proceedings of the 29th European Workshop on Computational Geometry (EuroCG)*, pages 107–110, 2013.
- [75] Christian Scheffer and Jan Vahrenhold. Simplified Medial-Axis Approximation with Guarantees. In *Proceedings of the 28th European Workshop on Computational Geometry (EuroCG)*, pages 161–164, 2012.
- [76] Christian Scheffer and Jan Vahrenhold. Simplified Medial-Axis Approximation with Guarantees. In *Proceedings of the first Young Researchers Forum (YRF)*, pages 9–10, 2012.
- [77] Christian Scheffer and Jan Vahrenhold. Learning a 2-Manifold with a Boundary in \mathbb{R}^3 . In *Proceedings of the 27th European Workshop on Computational Geometry (EuroCG)*, pages 213–216, 2011.
- [78] Christian Scheffer and Jan Vahrenhold. Approximating Geodesic Distances on 2-Manifolds in \mathbb{R}^3 . In *Proceedings of the 23rd Annual Canadian Conference on Computational Geometry (CCCG)*, 2011.