

List of Publications

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Journal Publications

- (J14) J. Arz, J. Fischer: Lempel-Ziv-78 Compressed String Dictionaries. *Algorithmica* **80**(7): 2012–2047, 2018 (Journal version of C24.)
- (J13) J. Fischer, T. I. D. Köppl, K. Sadakane: Lempel-Ziv Factorization Powered by Space Efficient Suffix Trees. *Algorithmica* **80**(7): 2048–2081, 2018.
- (J12) T. Bingmann, J. Fischer, V. Osipov: Inducing Suffix and LCP Arrays in External Memory. *ACM Journal on Experimental Algorithmics* **21**(2): Article No. 2.3, 2016. (Journal version of C21.)
- (J11) P. Bille, J. Fischer, I. L. Gørtz, T. Kopelowitz, B. Sach, H. W. Vildhøj: Sparse Text Index Construction in Small Space. *ACM Transactions on Algorithms* **12**(3): Article No. 39, 2016. (Journal version of C22.)
- (J10) J. Fischer, D. Peters: GLOUDS: Representing Tree-Like Graphs. *Journal of Discrete Algorithms* **36**: 39–49, 2016. (Journal version of C25.)
- (J9) K. Beskers, J. Fischer: High-Order Entropy Compressed Bit Vectors with Rank/Select. *Algorithms* **7**(4), 608–620, 2014.
- (J8) J. Barbay, J. Fischer, G. Navarro: LRM-Trees: Compressed Indices, Adaptive Sorting, and Compressed Permutations. *Theoretical Computer Science* **459**(1), 26–41, 2012. (Journal version of C17.)
- (J7) J. Fischer: Combined Data Structure for Previous- and Next-Smaller-Values. *Theoretical Computer Science* **412**(22), 2451–2456, 2011.
- (J6) J. Fischer, V. Heun: Space-Efficient Preprocessing Schemes for Range Minimum Queries on Static Arrays. *SIAM Journal on Computing* **40**(2), 465–492, 2011. (Journal version of the theoretical results from C4, C6, C9 und C14.)
- (J5) J. Fischer, D. Huson: New Common Ancestor Problems in Trees and Directed Acyclic Graphs. *Information Processing Letters* **110**(8–9), 331–335, 2010.
- (J4) J. Fischer: Wee LCP. *Information Processing Letters* **110**(8–9), 317–320, 2010.
- (J3) J. Fischer, V. Heun: Finding Range Minima in the Middle: Approximations and Applications. *Mathematics in Computer Science* **3**(1), 17–30, 2010. (Journal version of C13.)
- (J2) J. Fischer, V. Mäkinen, G. Navarro: Faster Entropy Bounded Compressed Suffix Trees. *Theoretical Computer Science* **410**(51), 5354–5364, 2009. (Journal version of C10.)
- (J1) S. Ginzinger, J. Fischer: SimShift: Identifying Structural Similarities from NMR Chemical Shifts. *Bioinformatics* **22**(4), 460–465, 2006.

Refereed Conference Publications

- (C40) J. Fischer, F. Kurpicz: Lightweight Distributed Suffix Array Construction. In: *Proc. ALENEX*, 27–38. SIAM, 2019.
- (C39) J. Fischer, F. Kurpicz, M. Löbel: Simple, Fast and Lightweight Parallel Wavelet Tree Construction. In: *Proc. ALENEX*, 9–20. SIAM, 2018.
- (C38) J. Fischer, D. Köppl: Practical Evaluation of Lempel-Ziv-78 and Lempel-Ziv-Welch Tries. In: G. Fici et al. (Ed.): *Proceedings of the 24th International Symposium on String Processing and Information Retrieval (SPIRE)*, LNCS 10508, 191–207. Springer, 2017.
- (C37) D. Peters, J. Fischer, F. Thiel and J.-P. Seifert: FLOUDS: A Succinct File System Structure. In: M. Ganzha et al.: *Position Papers of the 2017 Federated Conference on Computer Science and Information Systems*, ACSIS Vol. 12, 51–57. Polish Information Processing Society, 2017.
- (C36) J. Fischer, F. Kurpicz: Dismantling Divsufsort. In: J. Holub, J. Žďárek: *Proceedings of the Prague Stringology Conference*, 62–76. Czech Technical University in Prague, 2017.
- (C35) P. Bille, P. H. Cording, J. Fischer, I. L. Gørtz: Lempel-Ziv Compression in a Sliding Window. In: J. Kärkkäinen et al. (Ed.): *Proceedings of the 28th Annual Symposium on Combinatorial Pattern Matching (CPM)*, LIPIcs 78, 15:1–15:11. Schloss Dagstuhl, 2017.
- (C34) J. Fischer, A. Pasternak: Modularisierung im Informatikunterricht aus lernpsychologischer Perspektive. In: I. Diethelm (Ed.): *Informatische Bildung zum Verstehen und Gestalten der digitalen Welt (INFOS)*, Lecture Notes in Informatics 274, 247–256. Gesellschaft für Informatik, 2017.
- (C33) P. Dinklage, J. Fischer, D. Köppl, M. Löbel, K. Sadakane: Compression with the tudocomp Framework. *Proceedings of the 16th Symposium on Experimental Algorithms (SEA)*, LIPIcs 75, 13:1–13:22. Schloss Dagstuhl, 2017.
- (C32) J. Fischer, F. Kurpicz, P. Sanders: Engineering a Distributed Full-Text Index. In: *Proc. ALENEX*, 120–134. SIAM, 2017.
- (C31) J. Fischer, D. Köppl, F. Kurpicz: On the Benefit of Merging Suffix Array Intervals for Parallel Pattern Matching. In: R. Grossi, M. Lewenstein. (Ed.): *Proceedings of the 27th Annual Symposium on Combinatorial Pattern Matching (CPM)*, LIPIcs 54, 26:1–26:11. Schloss Dagstuhl, 2016.
- (C30) J. Fischer, T. I, D. Köppl: Deterministic Sparse Suffix Sorting on Rewritable Texts. In: E. Kranakis et al. (Ed.): *Proceedings of the 12th Latin American Symposium on Theoretical Informatics (LATIN)*, LNCS 9644, 483–496, 2016.
- (C29) J. Fischer, Š. Holub, T. I, M. Lewenstein: Beyond the Runs Theorem. In: C. Iliopoulos et al. (Ed.): *Proceedings of the 22nd International Symposium on String Processing and Information Retrieval (SPIRE)*, LNCS 9309, 277–286. Springer, 2015.
- (C28) J. Fischer, T. Gagie, P. Gawrychowski, T. Kociumaka: Approximating LZ77 via Small-Space Multiple-Pattern Matching. In: N. Bansal, I. Finocchi (Ed.): *Proceedings of the 23rd Annual European Symposium on Algorithms (ESA)*, LNCS 9294, 533–544. Springer, 2015.
- (C27) J. Fischer, T. I, D. Köppl: Lempel-Ziv Computation in Small Space (LZ-CISS). In: F. Cicalese et al. (Ed.): *Proceedings of the 26th Annual Symposium on Combinatorial Pattern Matching (CPM)*, LNCS 9133, 172–184. Springer, 2015.
- (C26) J. Fischer, P. Gawrychowski: Alphabet-Dependent String Searching with Wexponential Search Trees. In: F. Cicalese et al. (Ed.): *Proceedings of the 26th Annual Symposium on Combinatorial Pattern Matching (CPM)*, LNCS 9133, 160–171. Springer, 2015. Invited to a special issue of *Algorithmica*.

- (C25) J. Fischer, D. Peters: A Practical Succinct Data Structure for Tree-Like Graphs. In: M. S. Rahman, E. Tomita: (Ed.): *Proceedings of the 9th International Workshop on Algorithms and Computation (WALCOM)*, LNCS 8973, 65–76. Springer, 2015. Invited to a special issue of *J. Discr. Alg.*
- (C24) J. Arz, J. Fischer: LZ-Compressed String Dictionaries. In: *Proceedings of the 2014 Data Compression Conference (DCC)*, 322–331. IEEE Press, 2014. Invited to a special issue of *Algorithmica*.
- (C23) L. Arge, J. Fischer, P. Sanders, N. Sitchinava: On (Dynamic) Range Minimum Queries in External Memory. In: F. Dehne et al. (Ed.): *Proceedings of the 13th Algorithms and Data Structures Symposium (WADS)*, LNCS 8037, 37–48. Springer, 2013.
- (C22) P. Bille, J. Fischer, I. L. Gørtz, T. Kopelowitz, B. Sach, H. W. Vildhøj: Sparse Suffix Tree Construction in Small Space. In: F.V. Fomin et al. (Ed.): *Proceedings of the 40th International Symposium on Automata, Languages and Programming (ICALP, Part I)*, LNCS 7965, 148–159. Springer, 2013.
- (C21) T. Bingmann, J. Fischer, V. Osipov: Inducing Suffix and LCP Arrays in External Memory. In: Proc. ALENEX, 88–102. SIAM, 2013. Invited to a special issue of *ACM J. Exp. Alg.*
- (C20) J. Fischer, T. Gagie, T. Kopelowitz, M. Lewenstein, V. Mäkinen, L. Salmela, N. Välimäki: Forbidden Patterns. In: A. Fernández-Baca (Ed.): *Proceedings of the 10th Latin American Theoretical Informatics Symposium (LATIN)*, LNCS 7256, 327–337. Springer, 2012.
- (C19) A. Farzan, J. Fischer: Compact Representation of Posets. In: T. Asano et al. (Ed.): *Proceedings of the 22nd International Symposium on Algorithm and Computation (ISAAC)*, LNCS 7074, 302–311. Springer, 2011.
- (C18) J. Fischer: Inducing the LCP-Array. In: F. Dehne et al. (Ed.): *Proceedings of the 12th Algorithms and Data Structures Symposium (WADS)*, LNCS 6844, 374–385. Springer, 2011.
- (C17) J. Barbay, J. Fischer, G. Navarro: LRM-Trees: Compressed Indices, Adaptive Sorting, and Compressed Permutations. In: G. Manzini, R. Giancarlo (Ed.): *Proceedings of the 22nd Annual Symposium on Combinatorial Pattern Matching (CPM)*, LNCS 6661, 285–298. Springer, 2011.
- (C16) E. Ohlebusch, J. Fischer, S. Gog: CST++. In: E. Chavez, S. Lonardi (Ed.): *Proceedings of the 17th International Symposium on String Processing and Information Retrieval (SPIRE)*, LNCS 6393, 322–333. Springer, 2010.
- (C15) S. Gog, J. Fischer: Advantages of Shared Data Structures for Sequences of Balanced Parentheses. In: *Proceedings of the 2010 Data Compression Conference (DCC)*, 406–415. IEEE Press, 2010.
- (C14) J. Fischer: Optimal Succinctness for Range Minimum Queries. In: A. López-Ortiz (Ed.): *Proceedings of the 9th Latin American Theoretical Informatics Symposium (LATIN)*, LNCS 6034, 158–169. Springer, 2010. Invited to a special issue of *Algorithmica*.
- (C13) J. Fischer, V. Heun: Range Median of Minima Queries, Super-Cartesian Trees, and Text Indexing. In: K. Wada, M. Miller (Ed.): *Proceedings of the 19th International Workshop on Combinatorial Algorithms (IWOCA)*, 239–252. College Publications, 2010.
- (C12) J. Fischer: Short Labels for Lowest Common Ancestors in Trees. In: A. Fiat, P. Sanders (Ed.): *Proceedings of the 17th Annual European Symposium on Algorithms (ESA)*, LNCS 5757, 752–763. Springer, 2009.
- (C11) J. Fischer, V. Mäkinen, N. Välimäki: Space-Efficient String Mining under Frequency Constraints. In: *Proceedings of the 8th IEEE International Conference on Data Mining (ICDM)*, 193–202. IEEE Press, 2008.
- (C10) J. Fischer, V. Mäkinen, G. Navarro: An(other) Entropy-Bounded Compressed Suffix Tree. In: P. Ferragina, G. M. Landau (Ed.): *Proceedings of the 19th Annual Symposium on Combinatorial Pattern Matching (CPM)*, LNCS 5029, 152–165. Springer, 2008.

- (C9) J. Fischer, V. Heun, H. M. Stühler: Practical Entropy-Bounded Schemes for $O(1)$ -Range Minimum Queries. In: *Proceedings of the 2008 Data Compression Conference (DCC)*, 272–281. IEEE Press, 2008.
- (C8) P. Ferragina, J. Fischer: Suffix Arrays on Words. In: B. Ma, K. Zhang (Ed.): *Proceedings of the 18th Annual Symposium on Combinatorial Pattern Matching (CPM)*, LNCS 4580, 328–339. Springer, 2007.
- (C7) A. Amir, J. Fischer, M. Lewenstein: 2-Dimensional Range Minimum Queries. In: B. Ma, K. Zhang (Ed.): *Proceedings of the 18th Annual Symposium on Combinatorial Pattern Matching (CPM)*, LNCS 4580, 286–294. Springer, 2007.
- (C6) J. Fischer, V. Heun: A New Succinct Representation of RMQ-Information and Improvements in the Enhanced Suffix Array. In: B. Chen et al. (Ed.): *Proceedings of the International Symposium on Combinatorics, Algorithms, Probabilistic and Experimental Methodologies (ESCAPE)*, LNCS 4614, 459–470. Springer, 2007.
- (C5) J. Fischer, V. Heun, S. Kramer: Optimal String Mining under Frequency Constraints. In J. Fürnkranz et al. (Ed.): *Proceedings of the 10th European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD)*, LNAI 4213, 139–150. Springer, 2006.
- (C4) J. Fischer, V. Heun: Theoretical and Practical Improvements on the RMQ-Problem, with Applications to LCA and LCE. In: M. Lewenstein, G. Valiente (Ed.): *Proceedings of the 17th Annual Symposium on Combinatorial Pattern Matching (CPM)*, LNCS 4009, 36–48. Springer, 2006.
- (C3) J. Fischer, V. Heun, S. Kramer: Fast Frequent String Mining Using Suffix Arrays. In: *Proceedings of the 5th IEEE International Conference on Data Mining (ICDM)*, 609–612. IEEE Press, 2005.
- (C2) J. Fischer, S. Ginzinger: A 2-Approximation Algorithm for Sorting by Prefix Reversals. In: G. Støltting Brodal, S. Leonardi (Ed.): *Proceedings of the 13th Annual European Symposium on Algorithms (ESA)*, LNCS 3669, 415–425. Springer, 2005.
- (C1) J. Fischer, L. De Raedt: Towards Optimizing Conjunctive Inductive Queries. In: H. Dai et al. (Ed.): *Proceedings of the 8th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, LNAI 3056, 625–637. Springer, 2004.

Books and Chapters in Books

- (B2) J. Fischer: Compressed Range Minimum Queries. Entry in M.-Y. Kao (Ed.): *Encyclopedia of Algorithms (2nd Ed.)*, 379–382. Springer, 2016.
- (B1) J. Fischer, P. Sanders (Eds.): Combinatorial Pattern Matching. 24th Annual Symposium, CPM 2013, Bad Herrenalb, Germany, June 2013, Proceedings. Volume 7922 of Lecture Notes in Computer Science. Springer, 2013.