Martín Farach-Colton

martin@farach-colton.com

Academic Affiliations

2024 – **NYU**
Leonard J. Shustek Professor of Computer Science
Department of Computer Science and Engineering
Tandon School of Engineering
Affiliated Faculty in the Center for Data Science
Chair of CSE 2024 –

2023 **MIT**
Visiting Scientist, CSAIL

1994 – 2023 **Rutgers**, Department of Computer Science
2022 – 2023 **Distinguished Professor**
2005 – 2022 **Professor**
1998 – 2005 **Associate Professor**
1994 – 1998 **Assistant Professor**
Graduate Director, 2003 – 2006, 2012 – 2014, 2019 – 2020

1991 – 1994 **DIMACS**: Center for Discrete Math and Theoretical Computer Science
Postdoctoral Fellow

Industrial Affiliations

2026 – **Board of Advisors,** .pathways, Inc.

2019 – 2026 **Affiliated Researcher,** VMware Research Group

2006 – 2014 **Founder & CTO,** Tokutek, Acquired by Percona, Inc.

2000 – 2002 **Senior Research Scientist,** Google, Inc.

1997 – 1998 **Member of Technical Staff,** Bell Laboratories, Lucent Technologies

Education

Ph.D. 1991, Computer Science, University of Maryland, College Park.

M.D. 1988, The Johns Hopkins University School of Medicine, Baltimore, Maryland.

B.S. 1984, Mathematics and Chemistry, *magna cum laude*, with Honors from South Carolina College, University of South Carolina, Columbia.

Awards and Honors

2025 Richard M. Karp Distinguished Lecture, Simons Institute for the Theory of Computing, UC Berkeley

2024 Fellow of AAAS, "for distinguished contributions to the theory of data structures and their use in computer systems"

2023 Member of the Academia Nacional de Ciencias Exactas, Físicas y Naturales Argentina (Argentine National Academy of Sciences)

2022 Fellow of IEEE, "for contributions to data structures for storage systems"

2021 Fellow of ACM, "for contributions to data structures for biocomputing and big data"

2021 Fellow of SIAM, "for contributions to the design and analysis of algorithms and their use in

storage systems and computational biology"

2016 NetApp Faculty Fellow

2013 Distinguished Alumnus, 40th Anniversary of the University of Maryland Computer Science Department

2012 Rutgers Computer Science Graduate Student Society *Award for Excellence in Teaching*

1999 Rutgers Computer Science Graduate Student Society *Award for Excellence in Teaching*

1998 National Academy of Sciences *Frontiers of Science Fellow* (since renamed *Kavli Fellow*)

1996 Alfred P. Sloan Research Fellowship

1996 National Academy of Sciences *Frontiers of Science Fellow* (since renamed *Kavli Fellow*)

Awards for Papers

2026 "The Local/Global Disk Problem: How to Use Shared High-Bandwidth Storage Economically" (SPAA 2026): **Outstanding Paper Award**.

2025 "Don't Melt Your Cache: Low-Associativity with Heat-Sink" (SPAA 2025):

- **Distinguished Paper Award**
- Invited for a presentation at IGAFIT Highlights of Algorithms (HALG) 2026

2024 "History-Independent Dynamic Partitioning: Operation-Order Privacy in Ordered Data Structures" (PODS 2024):

- **Best Paper Award**
- **ACM SIGMOD Research Highlight Award**
- Selected for Special Issue of ACM Transactions on Database Systems, Best of PODS 2024
- Invited for a presentation at IGAFIT Highlights of Algorithms (HALG) 2026

2024 "Tight Bounds for Monotone Minimal Perfect Hashing" (SODA 2023): Selected for Special Issue for SODA 2023.

2024 "Tiny Pointers" (SODA 2023): Selected for Special Issue for SODA 2023.

2023 "Mosaic Pages: Big TLB Reach with Small Pages" (ASPLOS 2023):

- **Distinguished Paper Award**
- Selected for **IEEE Micro Top Picks**

2023 "Using Advanced Data Structures to Enable Responsive Security Monitoring" (Cluster Computing): Selected for Special Issue on "Innovating the Network for Data-Intensive Science".

2023 "Online List Labeling: Breaking the $\log^2 n$ Barrier" (FOCS 2022):

- Selected for Special Issue for FOCS 2022
- Invited for a presentation at IGAFIT Highlights of Algorithms (HALG) 2023

2020 "How to Copy Files" (FAST 2020):

- **Best Paper Award Finalist**
- Selected for Special Section for USENIX FAST 2020

2020 "Timely Reporting of Heavy Hitters using External Memory" (SIGMOD 2020): Selected for Special Issue of ACM Transactions on Database Systems, Best of SIGMOD 2020.

2019 "Small Refinements to the DAM Can Have Big Consequences for Data-Structure Design" (SPAA 2019): Selected for Special Issue for SPAA 2019.

2018 "The Full Path to Full-Path Indexing" (FAST 2018):

- **Best Paper Award Finalist**
- Selected for Special Issue for USENIX FAST 2018

2016 "Optimizing Every Operation in a Write-Optimized File System" (FAST 2016):

- **Best Paper Award**

- **Best of the Rest Award**, USENIX Annual Technical Conference 2016
- Selected for Special Issue for USENIX FAST 2016

2015 "BetrFS: A Right-Optimized Write-Optimized File System" (FAST 2015):

- **Best Paper Award Finalist**
- Selected for Special Issue for USENIX FAST 2015

2015 "Exact Sublinear Binomial Sampling" (ISAAC 2013): Selected for Special Issue for ISAAC 2013.

2012 "The LCA Problem Revisited" (LATIN 2000): **Imre Simon Test of Time Award**.

2006 "Insertion Sort is $O(n \log n)$" (FUN 2004): Selected for Special Issue for FUN 2004.

Invited Talks and Tutorials

2027 Keynote, SIAM Conference on Applied and Computational Discrete Algorithms (ACDA '27)

2027 Plenary Talk, ACM Symposium on Principles of Database Systems (PODS '27)

2025 Richard M. Karp Distinguished Lecture, Simons Institute for the Theory of Computing, UC Berkeley: "Virtualization and the Cost of Indirection"

2025 Tutorial, Simons Institute Boot Camp on Algorithmic Foundations for Emerging Computing Technologies: "How to Do Research with Systems Researchers"

2024 Tutorial, ACM SIGMOD International Conference on Management of Data (SIGMOD '24): "Beyond Bloom: A Tutorial on Future Feature-Rich Filters"

2018 Plenary Talk, International Conference on Fun with Algorithms (FUN '18): "Mind the Gap"

2017 Plenary Talk, International Symposium on Experimental Algorithms (SEA '17): "Dictionaries Revisited"

2016 Short Course (with M. A. Bender), Escuela de Ciencias Informáticas, Universidad de Buenos Aires (ECI '16): "Estructuras de datos modernas para sistemas de almacenamiento"

2013 Plenary Talk and Co-organizer, Special Session "1973+40=2013" on 40 Years of Suffix Trees, Symposium on Combinatorial Pattern Matching (CPM '13)

2012 Keynote, MySQL/NoSQL/Cloud Conference Latin America: "Write Optimization is the Right Read Optimization"

2012 Tutorial Co-organizer (with M. A. Bender), ACM Symposium on Theory of Computing (STOC '12): "Algorithms for Memory-Sensitive Computing"

2006 Plenary Talk, Symposium on String Processing and Information Retrieval (SPIRE '06)

2005 Short Course (with M. A. Bender), Escuela de Ciencias Informáticas, Universidad de Buenos Aires (ECI '05): "Algoritmos para Memoria Externa"

2004 Plenary Talk, Symposium on Combinatorial Pattern Matching (CPM '04), Istanbul: "How to Build a Suffix Tree"

2003 Plenary Talk, Encuentro Nacional de la Informática (ENC '03): "Adventures at Google"

1999 Short Course (with M. A. Bender), Escuela de Ciencias Informáticas, Universidad de Buenos Aires (ECI '99): "Estructuras de Datos Avanzadas"

1999 Opening Lecture, Escuela de Ciencias Informáticas, Universidad de Buenos Aires (ECI '99): "Avances recientes en Bioinformática"

1997 Short Course (with D. Durand, R. Ravi, M. Singh), Escuela de Ciencias Informáticas, Universidad de Buenos Aires (ECI '97): "Biología Molecular Computacional"

Press Coverage

- **Faster hash tables:** "Optimal Bounds for Open Addressing Without Reordering" (FOCS 2024)
  - Quanta Magazine YouTube Channel, 2026: "2025's Biggest Breakthroughs in Computer Science"
  - LaurieWired YouTube Channel, 2026: "The most unhinged (recent!) computer science discoveries"
  - CACM News, 2025: "Speeding Up Hash Tables"
  - Fanpu, via Tencent News (in Chinese), 2025: "A 40-Year-Old Computer Science Conjecture Falls, Overturned by an Undergraduate"
  - Urgente24 (in Spanish), 2025: "El descubrimiento que puede acelerar todo Internet"
  - Meduza (in Russian), 2025: "A Young US Mathematician Disproved a Theory Considered Unshakable for 40 Years, Because He Didn't Know About It"
  - SecurityLab.ru (in Russian), 2025: "Geniuses Were Wrong for 40 Years: A Student Accidentally Discovered a New Way to Store Data"
  - QbitAI (in Chinese), 2025: "Undergraduate Overturns Andrew Yao's 40-Year-Old Conjecture"
  - Sina Tech (in Chinese), 2025: "Undergraduate Overturns Yao's 40-Year-Old Conjecture: Hash Table Query Time Independent of Fullness"
  - Wired, 2025: "Undergraduate Upends a 40-Year-Old Data Science Conjecture"
  - Quanta Magazine, 2025: "Undergraduate Upends a 40-Year-Old Data Science Conjecture"
- **List labeling:** "Nearly Optimal List Labeling" (FOCS 2024)
  - CACM News, 2025: "An Algorithm for a Better Bookshelf"
  - Science & Vie Junior (in French), 2025: "Le dilemme de la bibliothèque"
  - Wired, 2025: "New Book-Sorting Algorithm Almost Reaches Perfection"
  - Quanta Magazine, 2025: "New Book-Sorting Algorithm Almost Reaches Perfection"
- **Hash table time/space tradeoff:** "On the Optimal Time/Space Tradeoff for Hash Tables" (STOC 2022)
  - Quanta Magazine, 2024: "Scientists Find Optimal Balance of Data Storage and Time"
- **Tokutek and Fractal Tree indexing**
  - The Register, 2015: "MySQL Maestro Percona Makes NoSQL Play with Tokutek Gobble"
  - Yahoo! Finance, 2015: "Percona Acquires Tokutek – Becomes First Vendor to Offer Both MySQL and MongoDB Software and Solutions"
  - DBMS2, 2013: "Tokutek's Interesting Indexing Strategy"
  - GlobeNewsWire, 2013: "Tokutek Meets Big Data Demand With Open Source TokuDB"
  - ODBMS Industry Watch, 2012: "Scaling MySQL and MariaDB to TBs: Interview with Martín Farach-Colton"
- **NSF BIGDATA award:** "Eliminating the Data Ingestion Bottleneck in Big-Data Applications" (White House Big Data Research and Development Initiative)
  - EdTech Magazine, 2013: "Big Data Gets Faster Thanks to Research at Rutgers and Stony Brook"
  - FedScoop, 2012: "NSF Commits $15 Million to Big Data Research"
  - National Science Foundation, via EurekAlert!, 2012: "NSF Announces Interagency Progress on Administration's Big Data Initiative"

Editorial and other Academic Boards

2027 – External Academic Evaluation Council (CEAE) of the School of Engineering and Applied Science, *Universidad Torcuato di Tella, Argentina*

2024 – Editor-in-Chief, *ACM Transactions on Parallel Computing*

2023 – 2025 Editorial Board Member, *Algorithmica*

2004 – 2014 Editorial Board Member, *ACM Transactions on Algorithms*

1994 – 2004 Editorial Board Member, *Journal of Algorithms*

1992 – 1994 Associate Editor for Computation and Engineering in Genomics, *IEEE Engineering in Medicine and Biology*

Patents

— *Method to Reduce Index Write-Amplification.* A. Conway, M. Farach-Colton, P. Shilane. US62/571584, 2017.

— *High-Performance Streaming Dictionary.* M. A. Bender, M. Farach-Colton, Y. R. Fogel, Z. Kasheff, B. C. Kuszmaul, V. Liberatore, B. Perlman, R. Prohaska, D. S. Wells. US8996563B2, 2015.

— *Streaming File System.* J. Esmet, M. A. Bender, M. Farach-Colton, B. C. Kuszmaul. US20150347477A1, Application: 2015.

— *Disk-Resident Streaming Dictionary.* B. C. Kuszmaul, M. A. Bender, M. Farach-Colton. US8489638B2, 2013.

— *Using Text Surrounding Hypertext Links When Indexing and Generating Page Summaries.* J. A. Dean, M. Farach-Colton, S. Ghemawat, B. Gomes, G. R. Hank. US8495483B1, 2013.

— *Disk-Resident Streaming Dictionary.* B. C. Kuszmaul, M. A. Bender, M. Farach-Colton. US8185551B2, 2012.

— *Systems and Methods for Performing Point-of-View Searching.* M. Farach-Colton, M. H. Henzinger, B.-W. Chang. US7296016B1, 2007.

Non-academic Activities

2025 *Luminary Award* for service to the Ali Forney Center

2020 – 2022 The Trevor Project, Board of Directors

2016 – 2018 Johns Hopkins Center for Talented Youth, Board of Advisors

2016 – 2018 Transgender Legal Defense and Education Fund, Board of Directors
Development Committee Chair 2016 – 2018

2015 Bronze Medal, IBJJF World Master Brazilian Jiu Jitsu Championship, Master 5, Purple, Middle-heavyweight

2013 – 2020 Ali Forney Center, Board of Directors
Nominating and Board Governance Committee Chair 2016 – 2019

2008 – 2014 Lambda Legal, Board of Directors
Development Committee Co-Chair 2008 – 2012
Board Governance Committee Co-Chair 2013 – 2014

Selected Professional Activities

2023 – 2026 Steering Committee Chair, SIAM Symposium on Algorithm Engineering and Experiments (ALENEX)

2022 – 2025 Steering Committee Member, European Symposium on Algorithms (ESA)

2019 – Committee Member, Dagstuhl Advisory Committee on Harassment

2019 – 2023 Founder and Steering Committee Chair, SIAM Symposium on Algorithmic Principles of Computer Systems (APOCS)

2018 – 2025 Committee Member, SafeTOC: Ad hoc committee to combat harassment and discrimination in the Theory of Computing community

Conference Leadership

2025 Conference Chair, SIAM Conference on Applied and Computational Discrete Algorithms (ACDA '25)

2023 Program Committee Chair, European Symposium on Algorithms (ESA '23)

2020 Program Committee Chair, SIAM Symposium on Algorithm Engineering and Experiments (ALENEX '21)

2020 Program Committee Chair, International Conference on Fun with Algorithms (FUN '20)

2020 Program Committee Chair, SIAM Symposium on Simplicity in Algorithms (SOSA '20)

2018 Conference Chair, Latin American Theoretical INformatics Symposium (LATIN '18)

2007 Conference Chair, Encuentro Nacional de la Informática (ENC '07), IR Track

2004 Program Committee Chair, Latin American Theoretical INformatics Symposium (LATIN '04)

2003 Program Committee Chair, ACM-SIAM Symposium on Discrete Algorithms (SODA '03)

1998 Program Committee Chair, Symposium on Combinatorial Pattern Matching (CPM '98)

Supervisory Activities

Postdoctoral Fellows: Nairen Cao, 2024 – 2026, faculty member at Shanghai University of Finance and Economics; David Tench, CRA Fellow, 2021 – 2023, Lawrence Berkeley National Laboratory; Richa Agarwala, 1994 – 1996, NIH; S. Muthukrishnan, 1994 – 1995, Amazon; R. Ravi, 1994 – 1995, faculty member at Carnegie Mellon University; Vineet Bafna, 1994 – 1996, faculty member at UC San Diego; Scott Decatur, 1996 – 1997, GMO, Inc.; Mona Singh, 1996 – 1997, faculty member at Princeton University; Shibu Yooseph, 1997 – 1998, faculty member at the University of Central Florida; Elizabeth Sweedyk, 1997 – 1999, faculty member at Harvey Mudd College, retired.

Current Ph.D. Students: Yarin Shechter, Zofia Štefankovič.

Graduated Ph.D. Students: Hanna Komlós, 2025, Max Planck Institute for Informatics, Saarbrücken; Guido Tagliavini Ponce, 2023, software engineer at Snowflake, Inc.; Alex Conway, 2020, faculty member at Cornell University; Meng-Tsung Tsai, 2017, senior researcher at Academia Sinica, Taipei, Taiwan; Rohan Fernandes, 2007, analyst at J.P. Morgan, New York; Yang Huang, 2007, NIH; Miguel Mosteiro, 2006, faculty member at Pace University; Vicky Choi, 2001, faculty member at Virginia Tech, retired; Rahul Shah, 2001, faculty member at Louisiana State University; Gabriela Hristescu, 2000, faculty member at Rowan University; Rick Desper, 1998, researcher at the University of Maryland; Vincenzo Liberatore, 1998, faculty member at Case Western Reserve University.

Grants

2026 – 2030 Co-PI for NSF Grant *Graph-based Vector Databases, from Theory to Practice*.

2023 – 2026 PI for NSF Grant *Algorithmic Performance through History Independence*.

2021 – 2024 PI for NSF Grant *Adventures in Flatland: Algorithms for Modern Memories*.

2019 – 2021 PI for NSF Grant *Accomplishment Based Renewal: FTFS: A Read/Write Optimized Fractal Tree File System*.

2017 – 2020 PI for NSF Grant *The Dictionary Problem Reconsidered*.

2016 – 2020 PI for NSF Grant *Theory and Implementation of Dynamic Data Structures for the GPU*.

2016 PI for ENC Grant *High-Performance File Systems*.

2015 – 2018 Co-PI for NIH Grant *Meaningful Data Compression and Reduction of High-Throughput Sequencing Data*, PI Alexander Schliep.

2014 – 2017 PI for NSF Grant *CSR: FTFS: A Read/Write-optimized Fractal Tree File System*.

2013 – 2016 PI for NSF Grant IIS-1247750 *BIGDATA: Eliminating the Data Ingestion Bottleneck in Big-Data Applications*.

2011 – 2014 PI for NSF Grant CCF-1114930 *Algorithms for Reallocation Problems*.

2011 – 2013 Co-PI for NSF SBIR Grant *A Multithreaded Storage Engine using Highly-Concurrent Fractal Trees*.

2009 – 2012 PI for NSF Grant CCF-0937829 *HECURA: Multidimensional and String Indexes for Streaming Data*.

2008 – 2011 PI for DOE Small Business Grant *Efficient Databases for HPC Clusters*.

2008 PI for NSF SBIR Grant *A Storage Engine for High-Volume Data*.

2006 – 2009 PI for NSF Grant CCF-0632838 *Adversarial Contention Resolution*.

2006 – 2009 PI for NSF Grant CCF-0621425 *Techniques for Streaming File Systems and Databases*.

2006 – 2008 PI for NSF Grant CCF-0541097 *High-Performance Data Access through Memory Abstraction*.

2000 – 2003 PI for DIMACS Activities in Bioinformatics, Fred Roberts and Craig Nevill-Manning Co-PIs

- Sloan Foundation.
- Celera Genomics.

1999 – 2003 PI for NSF Grant CCR-9820879 *Algorithms for Embedding Metric Spaces*.

1996 PI for NATO Grant CRG 960215.

1995 – 1998 PI for NSF CAREER Award CCR-9501942.

1995 PI for NSF Research Experience for Undergraduates Award.

1995 – 1998 Co-PI, *Mathematical Support for Molecular Biology*

- NSF BIR 94-12594.
- National Center for Human Genome Research/NIH (through NSF) BIR 94-12594-03-CONF.
- National Security Agency Grant ID#95I-191.
- Misc. small grants from Roche Molecular, Centers for Disease Control, National Institute for Allergies and Infectious Diseases, SmithKline Beecham, Merck Pharmaceutical, BioSym Tech, and Ciba Geigy (approximate total).

1994 – 1995 Co-PI with Michael Noordewier for NSF Grant BIR-9403650, *Computational Methods for Analyzing Genetic Regulatory Sequences*.

1994 – 1996 PI for NSF Grant DMS-9407039, *Improved Algorithms for Functional Analysis of Genomic Information*.

1992 – 1994 PI for NSF Grant CCR-9207931, *Applications of String Matching to Molecular Biology*.

Journal Articles

(1) M. A. Bender, M. Farach-Colton, M. T. Goodrich, H. Komlós. History-Independent Dynamic Partitioning with Applications to B-Trees, Skip Lists and Fusion Trees. *TODS*, 2026. Selected for Special Issue of ACM Transactions on Database Systems, Best of PODS 2024.

doi:10.1145/3810240

(2) M. A. Bender, R. Das, M. Farach-Colton, T. M. Mo, D. Tench, Y. P. Wang. Mitigating False Positives in Filters: to Adapt or to Cache. *TODS* 51(3):17:1–17:32, 2026. doi:10.1145/3786324

(3) M. A. Bender, A. Conway, M. Farach-Colton, W. Kuszmaul, G. Tagliavini. Tiny Pointers. *TALG* 21(4):38:1–38:43, 2025. Selected for Special Issue for SODA 2023. doi:10.1145/3700594

(4) S. Assadi, M. Farach-Colton, W. Kuszmaul. Tight Bounds for Monotone Minimal Perfect Hashing. *TALG* 21(4):36:1–36:23, 2025. Selected for Special Issue for SODA 2023. doi:10.1145/3677608

(5) M. A. Bender, A. Bhattacharjee, A. Conway, M. Farach-Colton, R. Johnson, S. Kannan, W. Kuszmaul, N. Mukherjee, D. E. Porter, G. Tagliavini, J. Vorobyeva, E. T. West. Paging and the Address-Translation Problem. *TALG* 21(4):43:1–43:22, 2025. doi:10.1145/3737700

(6) M. A. Bender, M. Farach-Colton, M. T. Goodrich, H. Komlós. History-Independent Dynamic Partitioning: Operation-Order Privacy in Ordered Data Structures. *SIGMOD Record* 54(1):17–26, 2025. **ACM SIGMOD Research Highlight Award**. doi:10.1145/3733620.3733625

(7) M. A. Bender, A. Conway, M. Farach-Colton, H. Komlós, W. Kuszmaul, N. Wein. Online List Labeling: Breaking the $\log^2 n$ Barrier. *SICOMP* 54(5):S22–S60, 2025. Selected for Special Issue for FOCS 2022. doi:10.1137/22m1534468

(8) K. Gosakan, J. Han, W. Kuszmaul, I. Mubarek, N. Mukherjee, G. Tagliavini, E. T. West, M. A. Bender, A. Bhattacharjee, A. Conway, M. Farach-Colton, J. Gandhi, R. Johnson, S. Kannan, D. E. Porter. Mosaic Pages: Big TLB Reach with Small Pages. *IEEE Micro* 44(4):52–59, 2024. Selected for **IEEE Micro Top Picks**. doi:10.1109/mm.2024.3409181

(9) D. Tench, E. T. West, V. Zhang, M. A. Bender, A. Chowdhury, J. A. Dellas, M. Farach-Colton, T. Seip, K. Zhang. GraphZeppelin: How to Find Connected Components (Even When Graphs Are Dense, Dynamic, and Massive). *TODS* 49(3):9:1–9:31, 2024. doi:10.1145/3643846

(10) M. A. Bender, A. Conway, M. Farach-Colton, W. Kuszmaul, G. Tagliavini. Iceberg Hashing: Optimizing Many Hash-Table Criteria at Once. *JACM* 70(6):40:1–40:51, 2023. doi:10.1145/3625817

(11) J. Vorobyeva, D. DeLayo, M. A. Bender, M. Farach-Colton, P. Pandey, C. A. Phillips, S. Singh, E. D. Thomas, T. M. Kroeger. Using Advanced Data Structures to Enable Responsive Security Monitoring. *Cluster Computing* 25(4):2893–2914, 2022. Selected for Special Issue on "Innovating the Network for Data-Intensive Science". doi:10.1007/s10586-021-03463-5

(12) M. A. Bender, J. W. Berry, M. Farach-Colton, R. Johnson, T. M. Kroeger, P. Pandey, C. A. Phillips, S. Singh. Timely Reporting of Heavy Hitters using External Memory. *TODS* 46(4):14:1–14:35, 2021. Selected for Special Issue of ACM Transactions on Database Systems, Best of SIGMOD 2020. doi:10.1145/3472392

(13) M. Farach-Colton, K. Leal, M. A. Mosteiro, C. Thraves Caro. Dynamic Windows Scheduling with Reallocation. *JEA* 26:1.11:1–1.11:19, 2021. doi:10.1145/3462208

(14) M. A. Bender, A. Conway, M. Farach-Colton, W. Jannen, Y. Jiao, R. Johnson, E. Knorr, S. McAllister, N. Mukherjee, P. Pandey, D. E. Porter, J. Yuan, Y. Zhan. External-Memory Dictionaries in the Affine and PDAM Models. *TOPC* 8(3):15:1–15:20, 2021. Selected for Special Issue for SPAA 2019. doi:10.1145/3470635

(15) Y. Zhan, A. Conway, Y. Jiao, N. Mukherjee, I. Groombridge, M. A. Bender, M. Farach-Colton, W. Jannen, R. Johnson, D. E. Porter, J. Yuan. Copy-on-Abundant-Write for Nimble File System Clones. *TOS* 17(1):5:1–5:27, 2021. Selected for Special Section for USENIX FAST 2020. doi:10.1145/3423495

(16) Y. Zhan, A. Conway, Y. Jiao, E. Knorr, M. A. Bender, M. Farach-Colton, W. Jannen, R. Johnson, D. E. Porter, J. Yuan. Efficient directory mutations in a full-path indexed file

system. *TOS* 14(3):22:1–22:27, 2018. Selected for Special Issue for USENIX FAST 2018. doi:10.1145/3241061

(17) J. Yuan, Y. Zhan, W. Jannen, P. Pandey, A. Akshintala, K. Chandnani, P. Deo, Z. Kasheff, L. Walsh, M. A. Bender, M. Farach-Colton, R. Johnson, B. C. Kuszmaul, D. E. Porter. Writes Wrought Right, and Other Adventures in File System Optimization. *TOS* 13(1):3:1–3:26, 2017. Selected for Special Issue for USENIX FAST 2016. doi:10.1145/3032969

(18) M. A. Bender, M. Farach-Colton, S. Fekete, J. Fineman, S. Gilbert. Cost-Oblivious Reallocation. *TALG* 13(3):38:1–38:20, 2017. doi:10.1145/3070693

(19) P. S. Almeida, C. Baquero, M. Farach-Colton, P. Jesus, M. A. Mosteiro. Fault-Tolerant Aggregation: Flow Update Meets Mass Distribution. *Distrib. Comput.* 30(4):281–291, 2017. doi:10.1007/s00446-016-0288-5

(20) A. Apostolico, M. Crochemore, M. Farach-Colton, Z. Galil, S. Muthukrishnan. 40 Years of Suffix Trees. *CACM* 59(4):66–73, 2016. doi:10.1145/2810036

(21) M. Farach-Colton and M.-T. Tsai. Exact Sublinear Binomial Sampling. *Algorithmica* 73(4):637–651, 2015. Selected for Special Issue for ISAAC 2013. doi:10.1007/s00453-015-0077-8

(22) M. Farach-Colton and M. A. Mosteiro. Initializing Sensor Networks of Non-uniform Density in the Weak Sensor Model. *Algorithmica* 73(1):87–114, 2015. doi:10.1007/s00453-014-9905-5

(23) W. Jannen, J. Yuan, Y. Zhan, A. Akshintala, J. Esmet, Y. Jiao, A. Mittal, P. Pandey, P. Reddy, L. Walsh, M. A. Bender, M. Farach-Colton, R. Johnson, B. C. Kuszmaul, D. E. Porter. BetrFS: A Right-Optimized Write-Optimized File System. *TOS* 11(4):18:1–18:29, 2015. Selected for Special Issue for USENIX FAST 2015. doi:10.1145/2798729

(24) M. A. Bender, M. Farach-Colton, S. Fekete, J. Fineman, S. Gilbert. Reallocation Problems in Scheduling. *Algorithmica* 73(2):389–409, 2015. doi:10.1007/s00453-014-9930-4

(25) M. Farach-Colton, A. Fernández-Anta, M. A. Mosteiro. Optimal Memory-aware Sensor Network Gossiping. *TCS* 472:60–80, 2013. doi:10.1016/j.tcs.2012.11.030

(26) M. Farach-Colton, R. J. Fernandes, M. A. Mosteiro. Bootstrapping a Hop-optimal Network in the Weak Sensor Model. *TALG* 5(4):37:1–37:30, 2009. doi:10.1145/1597036.1597040

(27) P. Bille and M. Farach-Colton. Fast and Compact Regular Expression Matching. *TCS* 409(3):486–496, 2008. doi:10.1016/j.tcs.2008.08.042

(28) N. Alon, M. Bădoiu, E. Demaine, M. Farach-Colton, M. Hajiaghayi, A. Sidiropoulos. Ordinal Embeddings of Minimum Relaxation: General Properties, Trees, and Ultrametrics. *TALG* 4(4):46:1–46:21, 2008. doi:10.1145/1383369.1383377

(29) M. Farach-Colton, G. Landau, C. Şahinalp, D. Tsur. Optimal spaced seeds for faster approximate string matching. *JCSS* 73(7):1035–1044, 2007. doi:10.1016/j.jcss.2007.03.007

(30) M. A. Bender, M. Farach-Colton, M. A. Mosteiro. Insertion Sort is $O(n \log n)$. *ToCS* 39(3):391–397, 2006. Selected for Special Issue for FUN 2004. doi:10.1007/s00224-005-1237-z

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