Andrew Rodriguez

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Education

2023 –	**Ph.D. Computer Science, Texas State University** Dissertation title: *High-Throughput Lossy and Lossless Compression of Scientific Data*
2021 – 2023	**M.S. Computer Science, University of Texas Rio Grande Valley** Thesis title: *Problems in Algorithmic Self-Assembly and a Genetic Approach to Patterns.*
2017 – 2021	**B.S. Computer Science, University of Texas at Austin**

Employment History

2025	**Doctoral Teaching Assistant.** Department of Computer Science, Texas State University.
2022	**Software Engineer.** InvoiceCloud, Brownsville, Texas.
2021 – 2023	**Research Assistant.** Algorithmic Self-Assembly Research Group (ASARG), University of Texas Rio Grande Valley.
2018 – 2021	**Teaching Assistant.** Department of Computer Science, University of Texas at Austin.

Research Publications

Conference Proceedings

1. A. M. Akathoott, **A. Rodriguez**, and M. Burtscher, "Sleek: Compressing memory copies for floating-point data on gpus," in *Proceedings of the 40th IEEE International Parallel and Distributed Processing Symposium*, 2026.
2. **A. Rodriguez** and M. Burtscher, "On the compressibility of floating-point data in posit and ieee-754 representation," in *Proceedings of the SC '25 Workshops of the International Conference for High Performance Computing, Networking, Storage and Analysis*, ser. SC Workshops '25, Association for Computing Machinery, 2025, pp. 300–306, ISBN: 9798400718717. DOI: 10.1145/3731599.3767372.
3. **A. Rodriguez**, N. Azami, and M. Burtscher, "Adaptive per-file lossless compression of floating-point data," in *2024 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*, 2024, pp. 423–430. DOI: 10.1109/IPDPSW63119.2024.00092.
4. R. M. Alaniz et al., "Complexity of reconfiguration in surface chemical reaction networks," in *Proc. of the 29th International Conference on DNA Computing and Molecular Programming (DNA'23)*, 2023.
5. R. M. Alaniz et al., "Covert computation in the abstract tile-assembly model," in *Proc. of the Symposium on Algorithmic Foundations of Dynamic Networks (SAND'23)*, 2023.
6. R. M. Alaniz et al., "Reconfiguration of linear surface chemical reaction networks with bounded state change," in *Proc. of the 35th Canadian Conference on Computational Geometry (CCCG'23)*, 2023.
7. S. C. Cirlos, T. Gomez, E. Grizzell, **A. Rodriguez**, R. Schweller, and T. Wylie, "Simulation of multiple stages in single bin active tile self-assembly," in *Proc. of the 20th International Conference on Unconventional Computation and Natural Computation (UCNC'23)*, 2023.

8 R. M. Alaniz et al., "Building squares with optimal state complexity in restricted active self-assembly," in *Proc. of the Symposium on Algorithmic Foundations of Dynamic Networks (SAND'22)*, J. Aspnes and O. Michail, Eds., ser. Leibniz International Proceedings in Informatics (LIPIcs), vol. 221, Dagstuhl, Germany: Schloss Dagstuhl – Leibniz-Zentrum für Informatik, 2022, 6:1–6:18, ISBN: 978-3-95977-224-2. URL: https://drops.dagstuhl.de/opus/volltexte/2022/15948.

9 B. Fu, T. Gomez, E. Grizzell, **A. Rodriguez**, R. Schweller, and T. Wylie, "Reachability in population protocols is pspace-complete (short abstract)," in *The 24th Japan Conference on Discrete and Computational Geometry, Graphs, and Games (JCDCG3'22)*, 2022.

10 **A. Rodriguez**, "Reachability in pikmin cave sublevels is pspace-complete (short abstract)," in *The 24th Japan Conference on Discrete and Computational Geometry, Graphs, and Games (JCDCG3'22)*, 2022.

Journal Articles

1 R. M. Alaniz et al., "Reachability in restricted chemical reaction networks," *Theoretical Computer Science*, vol. 1056, p. 115 514, 2025, ISSN: 0304-3975. DOI: https://doi.org/10.1016/j.tcs.2025.115514.

2 R. M. Alaniz et al., "Building squares with optimal state complexity in restricted active self-assembly," *Journal of Computer and System Sciences*, vol. 138, p. 103 462, 2023, ISSN: 0022-0000. DOI: https://doi.org/10.1016/j.jcss.2023.103462.