

CURRICULUM VITAE

Daniel M. Dunlavy

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Education

- Ph.D., Applied Mathematics and Scientific Computation, University of Maryland, College Park, 2005
 - *Thesis*: Homotopy Optimization and Protein Structure Prediction
 - *Advisor*: Dianne P. O'Leary
- M.S., Applied Mathematics and Scientific Computation, University of Maryland, College Park, 2003
 - *Thesis*: QCS: A System for Querying, Clustering and Summarizing Documents
 - *Advisor*: Dianne P. O'Leary
- M.S., Applied Mathematics, Western Michigan University, 2001
- B.A., Computer Studies, Northwestern University, 1994

Additional Coursework and Certifications

- Elements of Mathematical Statistics and Probability Theory, University of New Mexico, 2021
- [Specialization Certificate](#), Generative Adversarial Networks (GANs), Coursera, 2021
- [Specialization Certificate](#), Deep Learning, Coursera, 2018

Professional Experience

- Distinguished Member of Technical Staff (2022–present), Center for Computing Research, Sandia National Laboratories, Albuquerque, NM
- Principal Member of Technical Staff (2011–2022), Center for Computing Research, Sandia National Laboratories, Albuquerque, NM
- Senior Member of Technical Staff (2007–2011), Center for Computing Research, Sandia National Laboratories, Albuquerque, NM
- John von Neumann Postdoctoral Fellow (2005–2007), Center for Computing Research, Sandia National Laboratories, Albuquerque, NM
- Graduate Research Assistant (2001–2005), Department of Computer Science, University of Maryland, College Park, MD
- Student Intern (2002–2004), Center for Computing Sciences, Bowie, MD
- Student Intern (2001), Sandia National Laboratories, Livermore, CA
- Graduate Research Assistant (2000–2001), Department of Mathematics and Statistics, Western Michigan University, Kalamazoo, MI
- Visitor in Residence (2000), Institute for Mathematics and Its Applications, Minneapolis, MN
- Graduate Teaching Assistant (1999), Department of Mathematics and Statistics, Western Michigan University, Kalamazoo, MI
- Math Tutor, (1998–1999), Sylvan Learning Center, Stevensville, MI
- Computer Instructor (1998–1999), Lakeshore Public Schools, Stevensville, MI
- Computer Programmer (1995–1998), Sperling Sampson West, San Francisco, CA
- Computer Technician (1993–1994), Northwestern University, Evanston, IL

- Research Assistant (1992-1993), Electrical Engineering and Computer Science Department, Northwestern University, Evanston, IL
- Computer Programmer (1991–1993), GD Searle, Skokie, IL

Honors and Awards

- Award for Excellence (AI4SES Workshop Session Co-Organizer), Sandia National Labs, 2022
- Award for Excellence (MLDL Workshop Organizer), Sandia National Labs, 2020
- Mission Innovator Award, Sandia National Labs, 2016
- President’s Volunteer Service Award, Corporation for National and Community Service, 2016
- President’s Volunteer Service Award, Corporation for National and Community Service, 2015
- Award for Excellence (Exemplary Model Behavior), Sandia National Labs, 2015
- President’s Volunteer Service Award, Corporation for National and Community Service, 2014
- President’s Volunteer Service Award, Corporation for National and Community Service, 2013
- Award for Excellence (FY14 Cybersecurity Review), Sandia National Labs, 2013
- Award for Excellence (Hybrid Methods for Cybersecurity), Sandia National Labs, 2013
- Award for Excellence (PANTHER Grand Challenge Proposal), Sandia National Labs, 2012
- Best Special Session Paper, IEEE Intl. Conf. on Tools with Artificial Intelligence (ICTAI), 2011
- Award for Excellence (MAPD Working Group Organizer), Sandia National Labs, 2009
- Award for Excellence (Stockpile Evaluation-Informatics), Sandia National Labs, 2009
- Award for Excellence (Data Analysis Workshop Organizer), Sandia National Labs, 2008
- Award for Excellence (Technical Contributions, Text Analysis), Sandia National Labs, 2008
- Award for Excellence (Data Analysis Workshop Organizer), Sandia National Labs, 2007
- John von Neumann Postdoctoral Fellowship, Sandia National Labs, 2005–2007
- Award for Excellence (Recycling Program Organizaton), Sandia National Labs, 2006
- Biomedical Informatics Fellowship, National Library of Medicine, 2003–2005
- SIAM Student Travel Award, SIAM Conference on the Life Sciences, 2004
- SIAM Student Travel Award, Applied Linear Algebra Conference, 2003
- Winner, Spotlight on Graduate Research, University of Maryland, 2003
- Graduate Research Assistantship, University of Maryland, 2001–2003
- Block Fellowship, University of Maryland, 2001–2003
- Graduate Teaching Assistantship, Western Michigan University, 2001–2003
- Phi Kappa Phi Honor Society, WMU, 2001
- Travel Award, Yousef Alavi Endowment Fund, 2000
- Joseph Blazek Engineering Scholarship, 1989–1994
- Marquette National Bank Scholarship, 1989

Student and Postdoc Supervision (†Thesis Co-Chair, *Thesis Committee)

- Kevin Doherty (graduate), University of Colorado Boulder, 2023–2024
- Jeremy Myers (graduate), College of William & Mary, 2019–2024†
- Isaac Geronimo Anderson (graduate), University of Oregon, 2020–2023
- Jordan Medina (undergraduate), NM Institute of Mining and Technology, 2023
- Andrew Maicke (graduate), University of Texas at Austin, 2022
- Oscar López (postdoc), University of British Columbia - Vancouver, 2020

- Alexis Cooper (graduate), North Carolina A&T State University, 2020
- Xin Zhou (graduate), University of Houston, 2020
- Scott Heidbrink (graduate), Brigham Young University, 2017–2018
- Dalton Cole (graduate), Missouri Institute of Science and Technology, 2017
- Matthew Peterson (graduate), University of New Mexico, 2013–2014
- Kristen Howe (graduate), University of Arizona, 2014
- Taylor Turpen (undergraduate), University of San Diego, 2009
- Sean Gilpin (graduate), San Jose State University, 2008–2009*
- Evrim Acar Ataman (postdoc), Rensselaer Polytechnic Institute, 2008–2010

Software Development

- [Python HITMIX](#): graph hitting times (*lead*), 2021-present
- [pyttb \(Python Tensor Toolbox\)](#): tensor decompositions (*lead*), 2019-present
- XPCA: C++ tool for extended principal components analysis (*team*), 2018-present
- [Genten](#): C++ tool for large-scale tensor decompositions (*team*), 2017-2018
- [SparTen](#): C++ tool for large-scale tensor decompositions (*lead*), 2016-present
- Grafiki: C++ tool for large-scale graph/hypergraph analysis (*team*), 2014-present
- [Matlab Poblano Toolbox](#): large-scale, gradient-based optimization (*lead*), 2010-present
- Hybrid Toolkit: Python tool for analysis of data flows (*team*), 2010-2015
- [Matlab Tensor Toolbox](#): tensor decompositions (*team*), 2008-present
- ParaText/Titan: C++ tool for large-scale text analysis (*lead*), 2008-2012
- HEMLOCK: Java tool for heterogeneous ensemble classification (*lead*), 2008-2010
- LSA LIB: C++ library for text modeling using latent semantic analysis (LSA) (*lead*), 2008-present
- [Trilinos](#): C++ library for large-scale linear and nonlinear solvers (*team*), 2005-2009
- [DAKOTA](#): C++ framework for large-scale optimization (*team*), 2005-2007
- HOPE: Matlab tool homotopy optimization for unconstrained problems (*lead*), 2001-2007
- QCS: C++ tool information retrieval, clustering, and summarization tool (*lead*), 2001-2007

Professional Service

- *Editorial Work*
 - *Editor*, [NA Digest](#), 2010–2024 (lead), 2008-2010 (guest)
 - *Guest Editor*, Machine Learning: Science and Technology Special Issue, 2020
 - *Editorial Board*, ACM Transactions on KDD Special Issue, 2012
- *Workshop, Conference, and Minisymposium Organization & Leadership*
 - *Co-organizer*, Annual Sandia Machine Learning and Deep Learning Workshop, Sandia National Labs, 2017-2021
 - *Co-organizer*, AI and Tensor Factorizations for Physical, Chemical, and Biological Systems Workshop, 2019
 - *Tutorial Co-organizer*, [The Canonical Polyadic Tensor Decomposition and Variants for Mining Multi-Dimensional Data](#), SIAM Data Mining, 2018
 - *Program Committee*, SIAM Data Mining (2012-2014), IEEE LDAV (2012-2013), LDMTA (2010)
 - *Minisymposium Organizer*, SIAM Applied Linear Algebra (2021), SIAM Annual Meeting (2008-2010), SIAM Computation Science and Engineering (2007)

- *Professional Development Evening Co-organizer*, SIAM Annual Meeting (2008-2010), SIAM Computation Science and Engineering (2009)
- *Reviewer/Referee*
 - *Journals*: Algorithms, ACM Transactions on Knowledge Discovery from Data (TKDD), Computational Optimization and Applications (COAP), Data Mining and Knowledge Discovery (DAMI), Engineering Application of Artificial Intelligence, Expert Systems With Applications, IEEE Access, IEEE Transactions on Evolutionary Computing, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Signal Processing, Information Processing and Management, Information Sciences, Journal of Applied Mathematics and Computing, Journal of Biomedical Informatics (JBI), Journal of Machine Learning Research (JMLR), Journal of Parallel and Distributed Computing (JPDC), Knowledge and Information Systems, Linear Algebra and Applications (LAA), Machine Learning, Machine Learning: Science and Technology, Neural Computation, Numerical Linear Algebra with Applications, Optimization Methods and Software, Parallel Computing, SIAM J. Matrix Analysis and Applications (SIMAX), SIAM J. Numerical Analysis (SINUM), SIAM J. Scientific Computing (SISC), SIAM Review
 - *Conferences and Workshops*: AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, IEEE International Conference on Distributed Computing Systems (ICDCS), IEEE International Conference on Data Mining (ICDM), IEEE Symposium on Large-Scale Data Analysis and Visualization (LDAV), SIAM International Conference on Data Mining (SDM), Workshop on Large Scale Data Mining: Theory and Applications (LDMTA)
 - *Government/Nonprofit*: European Science Foundation, Los Alamos National Laboratory: Laboratory Research and Development (LDRD), MITACS (Canada), National Science Foundation, Sandia National Laboratories Laboratory Research and Development (LDRD), U.S. Department of Energy: Advanced Scientific Computing Research (ASCR), U.S. Department of Energy: Energy Efficiency & Renewable Energy (EERE), U.S. Department of Energy: High Energy Physics (HEP), U.S. Department of Energy: Scientific Discovery through Advanced Computing (SciDAC)

Professional Society Membership

- [Society for Industrial and Applied Mathematics \(SIAM\)](#)

Book Chapters

- [B2] Timothy M. Shead, Irina K. Tezaur, Warren L. Davis IV, Max L. Carlson, Daniel M. Dunlavy, Eric J. Parish, Patrick J. Blonigan, John Tencer, Francesco Rizzi, Hemanth Kolla, A Novel *In Situ* Machine Learning Framework for Intelligent Data Capture and Event Detection, in *Lecture Notes in Energy: Machine Learning and its Application to Reacting Flows*, N. Swaminathan and Alessandro Parente, eds, Springer, 2023. [\[DOI\]](#) [\[PDF\]](#)
- [B1] Daniel M. Dunlavy, Tamara G. Kolda, W. Philip Kegelmeyer, Multilinear Algebra for Analyzing Data with Multiple Linkages, in *Graph Algorithms in the Language of Linear Algebra*, J. Kepner and J. Gilbert, eds, SIAM, Philadelphia, PA, 2011. [\[DOI\]](#) [\[PDF\]](#)

Peer-Reviewed Publications

- [PR27] Jeremy Myers, Daniel M. Dunlavy, Tensor Decompositions for Count Data that Leverage Stochastic and Deterministic Optimization *Optimization Methods and Software*, 1–36, September 2024. [\[DOI\]](#)
- [PR26] Oscar López, Daniel M. Dunlavy, Richard B. Lehoucq, Zero-Truncated Poisson Regression for Sparse Multiway Count Data Corrupted by False Zeros, *Information and Inference: A Journal of the IMA*, 12(3):1573–1611, September 2023. [\[DOI\]](#)
- [PR25] Stephen L. Olivier, Nathan D. Ellingwood, Jonathan Berry, Daniel M. Dunlavy, Performance Portability of an SpMV Kernel Across Scientific Computing and Data Science Applications, in

- Proceedings of the IEEE High Performance Extreme Computing Conference (HPEC'21)*, September 2021. [DOI] [PDF]
- [PR24] Jeremy Myers, Daniel M. Dunlavy, Using Computation Effectively for Scalable Poisson Tensor Factorization: Comparing Methods Beyond Computational Efficiency, in *Proceedings of the IEEE High Performance Extreme Computing Conference (HPEC'21)*, September 2021. [DOI] [PDF]
- [PR23] S. Isaac Geronimo Anderson, Keita Teranishi, Daniel M. Dunlavy, Jee Choi, Performance-Portable Sparse Tensor Decomposition Kernels on Emerging Parallel Architectures, in *Proceedings of the IEEE High Performance Extreme Computing Conference (HPEC'21)*, September 2021. [PDF]
- [PR22] Keita Teranishi, Daniel M. Dunlavy, Jeremy Myers, Richard F. Barrett, SparTen: Leveraging Kokkos for On-node Parallelism in a Second Order Method for Fitting Canonical Polyadic Tensor Models to Poisson Data, in *Proceedings of the IEEE High Performance Extreme Computing Conference (HPEC'20)*, September 2020. [DOI] [PDF]
- [PR21] Jeremy Myers, Daniel M. Dunlavy, Keita Teranishi, David S Hollman, Parameter Sensitivity Analysis of the SparTen High Performance Sparse Tensor Decomposition Software, in *Proceedings of the IEEE High Performance Extreme Computing Conference (HPEC'20)*, September 2020. [DOI] [PDF]
- [PR20] Jonathan Bisila, Daniel M. Dunlavy, Zoe N. Gastelum, Craig D. Ulmer, Topic Modeling with Natural Language Processing for Identification of Nuclear Proliferation-Relevant Scientific and Technical Publications, in *Proceedings of the INMM Annual Meeting*, July 2020. [URL] [PDF]
- [PR19] Michael M. Wolf, Alicia M. Klinvex, Daniel M. Dunlavy, Advantages to Modeling Relational Data using Hypergraphs versus Graphs, in *Proceedings of the IEEE High Performance Extreme Computing Conference (HPEC'16)*, September 2016. [DOI] [PDF]
- [PR18] Patricia Crossno, Andrew Wilson, Timothy Shead, Warren L. Davis IV, Daniel Dunlavy, TopicView: Visual Analysis of Topic Models and their Impact on Document Clustering, *Journal on Artificial Intelligence Tools*, 22(5), 2013. [DOI] [PDF]
- [PR17] Brian Wylie, Daniel Dunlavy, Warren Davis IV, Jeff Baumes, Using NoSQL Databases for Streaming Network Analysis, in *Proceedings of the IEEE Symposium on Large Scale Data Analysis and Visualization (LDAV)*, October 2012. [DOI] [PDF]
- [PR16] Daniel M. Dunlavy, Tamara G. Kolda, Evrim Acar, Temporal Link Prediction using Matrix and Tensor Factorizations, *ACM Transactions on Knowledge Discovery from Data*, 5(2):1–27, 2011. [DOI] [PDF]
- [PR15] Evrim Acar, Daniel M. Dunlavy, Tamara G. Kolda, Morten Mørup, Scalable Tensor Factorizations for Incomplete Data, *Chemometrics and Intelligent Laboratory Systems*, 106(1):41–56, 2011. [DOI] [PDF]
- [PR14] Evrim Acar, Daniel M. Dunlavy, Tamara G. Kolda, A Scalable Optimization Approach for Fitting Canonical Tensor Decompositions, *Journal of Chemometrics*, 25(2):67–86, 2011. [DOI] [PDF]
- [PR13] Patricia J. Crossno, Andrew T. Wilson, Timothy M. Shead, Daniel M. Dunlavy, TopicView: Visually Comparing Topic Models of Text Collections, in *Proceedings of the 2011 IEEE International Conference on Tools with Artificial Intelligence (ICTAI), Special Session on Text and Web Mining (TWM)*, November 2011. [DOI] [PDF]
- [PR12] Patricia J. Crossno, Andrew T. Wilson, Daniel M. Dunlavy, Timothy M. Shead, TopicView: Understanding Document Relationships Using Latent Dirichlet Allocation Models, in *Proceedings of the IEEE Workshop on Interactive Visual Text Analytics for Decision Making*, October 2011. [URL] [PDF]
- [PR11] Evrim Acar, Tamara G. Kolda, Daniel M. Dunlavy, All-at-once Optimization for Coupled Matrix and Tensor Factorizations, in *Proceedings of Mining and Learning with Graphs (MLG)*, August 2011. [URL] [PDF]
- [PR10] Daniel M. Dunlavy, Timothy M. Shead, Eric T. Stanton, ParaText: Scalable Text Modeling and Analysis, in *HPDC10: Proceedings of the 19th International ACM Symposium on High Performance Distributed Computing*, June 2010. [DOI] [PDF]

- [PR9] Evrim Acar, Daniel M. Dunlavy, Tamara G. Kolda, Morten Mørup, Scalable Tensor Factorizations with Missing Data, in *SDM10: Proceedings of the 2010 SIAM Conference on Data Mining*, April 2010. [\[DOI\]](#) [\[PDF\]](#)
- [PR8] Evrim Acar, Tamara G. Kolda, Daniel M. Dunlavy, Link Prediction on Evolving Data using Matrix and Tensor Factorization, in *LDMTA2009: Proceedings of the 1st Workshop on Large-Scale Data Mining: Theory and Applications*, December 2009. [\[DOI\]](#) [\[PDF\]](#)
- [PR7] Patricia J. Crossno, Daniel M. Dunlavy, Timothy M. Shead, LSAView: A Tool for Visual Exploration of Latent Semantic Modeling, in *IEEE Symposium on Visual Analytics Science and Technology*, October 2009. [\[DOI\]](#) [\[PDF\]](#)
- [PR6] Daniel M. Dunlavy, Dianne P. O’Leary, John M. Conroy, Judith D. Schlesinger, QCS: A System for Querying, Clustering, and Summarizing Documents, *Information Processing & Management*, 43(6), p. 1588–1605, 2007. [\[DOI\]](#) [\[PDF\]](#)
- [PR5] Michael S. Eldred, Daniel M. Dunlavy, Formulations for Surrogate-Based Optimization with Data, AIAA-2006-7117, in *Proceedings of the 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference*, September 2006. [\[DOI\]](#) [\[PDF\]](#)
- [PR4] Daniel M. Dunlavy, Dianne P. O’Leary, Dmitri Klimov, Devarajan Thirumalai, HOPE: A Homotopy Optimization Method for Protein Structure Prediction, *Journal of Computation Biology*, 12(10):1275–1288, December 2005. [\[DOI\]](#) [\[PDF\]](#)
- [PR3] D. Steven Mackey, Niloufer Mackey and Daniel M. Dunlavy, Structure Preserving Algorithms for Perplectic Eigenproblems, *Electronic Journal of Linear Algebra*, 13:10–39, 2005. [\[DOI\]](#) [\[PDF\]](#)
- [PR2] John M. Conroy, Dianne P. O’Leary, Daniel M. Dunlavy, From TREC to DUC to TREC Again, in *Proceedings of the Twelfth Text Retrieval Conference (TREC)*, 2004. [\[URL\]](#) [\[PDF\]](#)
- [PR1] Daniel M. Dunlavy, John M. Conroy, Judith D. Schlesinger, Sarah A. Goodman, Mary E. Okurowski, Dianne P. O’Leary, Hans van Halteren, Performance of a Three-Stage System for Multi-Document Summarization, in *Proceedings of the Document Understanding Conference (DUC)*, 2003. [\[URL\]](#) [\[PDF\]](#)

Other Conference and Workshop Publications

- [O3] S. Isaac Geronimo Anderson, Daniel M. Dunlavy, Computing Sparse Tensor Decompositions via Chapel and C++/MPI Interoperability without Intermediate I/O, in *Proceedings of the 10th Annual Chapel Implementers and Users Workshop (CHI UW 2023)*, June 2023. [\[PDF\]](#)
- [O2] Evrim Acar, Tamara G. Kolda, Daniel M. Dunlavy, CPOPT: Optimization for Fitting CANDECOMP/PARAFAC Models, in *CASTA 2008: Workshop on Computational Algebraic Statistics, Theories and Applications*, December 2008. [\[PDF\]](#)
- [O1] Daniel M. Dunlavy, John M. Conroy, Dianne P. O’Leary, QCS: A Tool for Querying, Clustering, and Summarizing Documents, in *Companion Volume of the Proceedings of HLT-NAACL 2003 - Demonstrations*, June 2003. [\[URL\]](#)

Technical Reports

- [T36] Jeremy Myers, Daniel M. Dunlavy, Tensor Decompositions for Count Data that Leverage Stochastic and Deterministic Optimization, arXiv:2207.14341, July 2024. [\[URL\]](#)
- [T35] S. Isaac Geronimo Anderson, Daniel M. Dunlavy, Computing Sparse Tensor Decompositions via Chapel and C++/MPI Interoperability without Intermediate I/O, arXiv:2310.10872, October 2023. [\[URL\]](#)
- [T34] S. Isaac Geronimo Anderson, Keita Teranishi, Daniel M. Dunlavy, Jee Choi, Analyzing the Performance Portability of Tensor Decomposition, arXiv:2307.03276, July 2023. [\[URL\]](#)
- [T33] Oscar López, Daniel M. Dunlavy, Richard B. Lehoucq, Zero-Truncated Poisson Regression for Zero-Inflated Multiway Count Data, arXiv:2201.10014, April 2023. [\[URL\]](#)

- [T32] Daniel M. Dunlavy, Peter A. Chew, Document Retrieval and Ranking using Similarity Graph Mean Hitting Times, Technical Report Number SAND2021-15731, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, December 2021. [\[PDF\]](#)
- [T32] Jonathan Bisila, Erica Douglas, Daniel M. Dunlavy, Assessing the Interdisciplinarity of Scientific Research Proposals using Text Analysis Methods, Technical Report Number SAND2021-14786, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, November 2021.
- [T31] Jeremy M. Myers, Daniel M. Dunlavy, Keita Teranishi, D. S. Hollman, Parameter Sensitivity Analysis of the SparTen High Performance Sparse Tensor Decomposition Software: Extended Analysis, arXiv:2012.01520, December 2020. [\[URL\]](#)
- [T30] Scott Heidbrink, Kathryn N. Rodhouse, Daniel M. Dunlavy, Alexis Cooper, Xin Zhou, LDRD Final Report: Joint Analysis of Program Data Representations using Machine Learning for Improved Software Assurance and Development Capabilities, Technical Report Number SAND2020-10150, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, September 2020. [\[PDF\]](#)
- [T29] Alexis Cooper, Xin Zhou, Scott Heidbrink, Daniel M. Dunlavy, Using Neural Architecture Search for Improving Software Flaw Detection in Multimodal Deep Learning Models, arXiv:2009.10644, September 2020. [\[URL\]](#)
- [T28] Scott Heidbrink, Kathryn N. Rodhouse, Daniel M. Dunlavy, Multimodal Deep Learning for Flaw Detection in Software Programs, arXiv:2009.04549, September 2020. [\[URL\]](#)
- [T27] Daniel M. Dunlavy, Fulton Wang, Michael Wolf, Nathan D. Ellingwood, LDRD Final Report: Modeling Complex Relationships in Large-Scale Data using Hypergraphs, Technical Report Number SAND2019-14159, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, November 2019. [\[PDF\]](#)
- [T26] Gary J Saavedra, Kathryn N Rodhouse, Daniel M Dunlavy, W. Philip Kegelmeyer, A Review of Machine Learning Applications in Fuzzing, arXiv:1906.11133, October 2019. [\[URL\]](#)
- [T25] Timothy M. Shead, Konduri Aditya, Hemanth Kolla, Daniel M. Dunlavy, W. Philip Kegelmeyer, Warren L. Davis IV, Embedding Python for In-Situ Analysis, Technical Report Number SAND2018-9009, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, August 2018. [\[PDF\]](#)
- [T24] Warren L. Davis IV, Daniel M. Dunlavy, Yevgeniy Vorobeychik, Karin Butler, Chris Forsythe, Matt Letter, Nichole Murchison, Kevin Nauer, Using Machine Learning in Adversarial Environments, Technical Report Number SAND2016-10426, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, October 2016. [\[PDF\]](#)
- [T23] Daniel M. Dunlavy, Peter A. Chew, Constrained Versions of DEDICOM for Use in Unsupervised Part-Of-Speech Tagging, Technical Report Number SAND2016-4520, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, May 2016. [\[PDF\]](#)
- [T22] Matthew G. Peterson, Daniel M. Dunlavy, Tensor Toolbox: Wrapping to Python using SWIG, Technical Report Number SAND2015-38290, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, December 2014. [\[PDF\]](#)
- [T21] Warren L. Davis IV, Daniel M. Dunlavy, Hybrid Methods for Cybersecurity Analysis LDRD Final Report, Technical Report Number SAND2014-0446, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, January 2014. [\[PDF\]](#)
- [T20] W. Philip Kegelmeyer, Timothy M. Shead, Daniel M. Dunlavy, Network and Ensemble Enabled Entity Extraction in Informal Text (NEEEEIT) Final Report, Technical Report Number SAND2013-9344, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, September 2013. [\[PDF\]](#)
- [T19] Daniel M. Dunlavy, Timothy M. Shead, Patricia J. Crossno, Eric T. Stanton, ParaText—Scalable Solutions for Processing and Searching Very Large Document Collections: Final LDRD Report, Technical Report Number SAND2010-6269, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, September 2010. [\[PDF\]](#)

- [T18] Daniel M. Dunlavy, Tamara G. Kolda, Evrim Acar, Poblano v1.0: A Matlab Toolbox for Gradient-Based Optimization, Technical Report Number SAND2010-1422, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, March 2010. [[PDF](#)]
- [T17] Evrim Acar, Daniel M. Dunlavy, Tamara G. Kolda, Morton Mørup, Scalable Tensor Factorizations with Missing Data, Technical Report Number SAND2009-6764, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, October 2009. [[PDF](#)]
- [T16] Sean A. Gilpin, Daniel M. Dunlavy, Relationships Between Accuracy and Diversity in Heterogeneous Ensemble Classifiers, Technical Report Number SAND2009-6940C, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, September 2009. [[PDF](#)]
- [T15] Taylor P. Turpen, Daniel M. Dunlavy, Semisupervised Named Entity Recognition, Technical Report Number SAND2010-3083P, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, September 2009. [[PDF](#)]
- [T14] Evrim Acar, Tamara G. Kolda, Daniel M. Dunlavy, An Optimization Approach for Fitting Canonical Tensor Decompositions, Technical Report Number SAND2009-0857, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, February 2009. [[PDF](#)]
- [T13] Daniel M. Dunlavy, Bruce A. Hendrickson, Tamara G. Kolda, Mathematical Challenges in Cybersecurity, Technical Report Number SAND2009-0805, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, February 2009. [[PDF](#)]
- [T12] Sean A. Gilpin, Daniel M. Dunlavy, Heterogeneous Ensemble Classification, Technical Report Number SAND2009-0203P, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, January 2009. [[PDF](#)]
- [T11] Roscoe A. Bartlett, Daniel M. Dunlavy, Esteban J. Guillen, Tim Shead, Trilinos CMake Evaluation, Technical Report Number SAND2008-7593, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, November 2008. [[PDF](#)]
- [T10] James M. Brandt, Daniel M. Dunlavy, Ann C. Gentile, Proceedings of the 2008 Sandia Workshop on Data Mining and Data Analysis, Technical Report Number SAND2008-6109, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, September 2008. [[PDF](#)]
- [T9] Justin D. Basilico, Daniel M. Dunlavy, Stephen J. Verzi, Travis L. Bauer, Wendy Shaneyfelt, Yucca Mountain LSN Archive Assistant, Technical Report Number SAND2008-1622, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, March 2008. [[PDF](#)]
- [T8] Daniel M. Dunlavy, Dianne P. O’Leary, John M. Conroy, Judith D. Schlesinger, QCS: A System for Querying, Clustering, and Summarizing Documents, Technical Report Number SAND2006-5000, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, October 2006. [[PDF](#)]
- [T7] Michael S. Eldred, Shannon L. Brown, Brian M. Adams, Daniel M. Dunlavy, David M. Gay, Laura P. Swiler, Anthony A. Giunta, William E. Hart, Jean-Paul Watson, John P. Eddy, Josh D. Griffin, Patty D. Hough, Tammy G. Kolda, Monica L. Martinez-Canales, Pamela J. Williams, DAKOTA, A Multilevel Parallel Object-Oriented Framework for Design Optimization, Parameter Estimation, Uncertainty Quantification, and Sensitivity Analysis: Version 4.0 Users Manual, Technical Report Number SAND2006-6637, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, October 2006. [[PDF](#)]
- [T6] Michael S. Eldred, Shannon L. Brown, Brian M. Adams, Daniel M. Dunlavy, David M. Gay, Laura P. Swiler, Anthony A. Giunta, William E. Hart, Jean-Paul Watson, John P. Eddy, Josh D. Griffin, Patty D. Hough, Tammy G. Kolda, Monica L. Martinez-Canales, Pamela J. Williams, DAKOTA, A Multilevel Parallel Object-Oriented Framework for Design Optimization, Parameter Estimation, Uncertainty Quantification, and Sensitivity Analysis: Version 4.0 Developers Manual, Technical Report Number SAND2006-4056, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, September 2006. [[PDF](#)]
- [T5] Michael S. Eldred, Shannon L. Brown, Brian M. Adams, Daniel M. Dunlavy, David M. Gay, Laura P. Swiler, Anthony A. Giunta, William E. Hart, Jean-Paul Watson, John P. Eddy, Josh D. Griffin, Patty D. Hough, Tammy G. Kolda, Monica L. Martinez-Canales, Pamela J. Williams, DAKOTA, A Multilevel Parallel Object-Oriented Framework for Design Optimization, Parameter Estimation,

- Uncertainty Quantification, and Sensitivity Analysis: Version 4.0 Reference Manual, Technical Report Number SAND2006-4055, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, September 2006. [\[PDF\]](#)
- [T4] Daniel M. Dunlavy, Tamara G. Kolda, W. Philip Kegelmeyer, Multilinear Algebra for Analyzing Data with Multiple Linkages, Technical Report Number SAND2006-2079, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, April 2006. [\[PDF\]](#)
- [T3] Daniel M. Dunlavy, Dianne P. O’Leary, Homotopy Optimization Methods for Global Optimization, Technical Report Number SAND2005-7495, Sandia National Laboratories, Albuquerque, NM and Livermore, CA, December 2005. [\[PDF\]](#)
- [T2] D. Steven Mackey, Niloufer Mackey, Daniel M. Dunlavy, Structure Preserving Algorithms for Perplectic Eigenproblems, *Numerical Analysis Report No. 427*, Manchester Centre for Computational Mathematics, Manchester, England, May 2003. [\[PDF\]](#)
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