

Wesley Tansey

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Education

2011–2017	PhD in Computer Science, University of Texas at Austin Advisor: Prof. James G. Scott Dissertation: Scalable smoothing algorithms for massive graph-structured data
2006–2008	MS in Computer Science, Virginia Tech
2003–2006	BS in Computer Science, Virginia Tech

Academic Appointments

2017–Present	Postdoctoral Research Scientist, Columbia University Supervisors: Profs. Raul Rabadan and David Blei.
2016	Visiting Researcher, Duke University Supervisor: Prof. Lawrence Carin
2015	Visiting Researcher, Stanford University Supervisor: Prof. Russell Poldrack

Awards

Columbia Data Science Institute Seed Funds Grant: \$200K to develop personalized cancer therapies using deep probabilistic models
2x Recipient of the Garg Fellowship for Research with Real-World Impact
Recipient of NSF Beacon Grant
NSF Graduate Research Fellowship Program, Honorable Mention in Machine Learning
Outstanding Graduate Student Award, Virginia Tech

Publications and Preprints

2019	W. Tansey , C. Tosh, and D. M. Blei. Relational dose-response modeling for cancer drug studies. <i>arXiv preprint arXiv:1906.04072</i> , 2019.
2019	C. Burns, J. Thomason, and W. Tansey . Interpreting black box models via hypothesis testing. <i>arXiv preprint arXiv:1904.00045</i> , 2019.
2018	W. Tansey , K. Li, H. Zhang, Scott W. Linderman, R. Rabadan, D. M. Blei, and Chris H. Wiggins. Dose-response modeling in high-throughput cancer drug screenings: An end-to-end approach. <i>arXiv preprint arXiv:1812.05691</i> , 2018.
2018	W. Tansey , V. Veitch, H. Zhang, R. Rabadan, and D. M. Blei. The holdout randomization test: Principled and easy black box feature selection. <i>In revision at The Journal of Machine Learning Research (arXiv preprint arXiv:1811.00645)</i> ., 2018.

- 2018 **W. Tansey**, Y. Wang, D. M. Blei, and R. Rabadan. Black box FDR. In *International Conference on Machine Learning*, pages 4874–4883, 2018.
- 2018 **W. Tansey**, O. Koyejo, R. A. Poldrack, and J. G. Scott. False discovery rate smoothing. *Journal of the American Statistical Association*, 113(523):1156–1171, 2018.
- 2018 **W. Tansey**, Karl Pichotta, and James G Scott. Leaf-smoothed hierarchical softmax for ordinal prediction. In *AAAI Conference on Artificial Intelligence*, 2018.
- 2018 **W. Tansey**, J. Thomason, and J. G. Scott. Maximum-variance total variation denoising for interpretable spatial smoothing. In *AAAI Conference on Artificial Intelligence*, 2018.
- 2017 **W. Tansey**, A. Athey, A. Reinhart, and J. G. Scott. Multiscale spatial density smoothing: an application to large-scale radiological survey and anomaly detection. *Journal of the American Statistical Association*, 112(519):1047–1063, 2017.
- 2016 **W. Tansey**, E. W. Lowe, and J. G. Scott. Diet2vec: Multi-scale analysis of massive dietary data. In *NIPS Workshop on Machine Learning for Health*, 2016.
- 2015 **W. Tansey**, O.-H. Madrid-Padilla, A. Suggala, and P. Ravikumar. Vector-space markov random fields via exponential families. In *International Conference on Machine Learning*, 2015.
- 2012 R. Miikkulainen, E. Feasley, L. Johnson, I. Karpov, P. Rajagopalan, A. Rawal, and **W. Tansey**. Multiagent learning through neuroevolution. *Advances in Computational Intelligence*, pages 24–46, 2012.
- 2012 **W. Tansey**, E. Feasley, and R. Miikkulainen. Accelerating evolution via egalitarian social learning. In *International Conference on Genetic and Evolutionary Computation Conference*, pages 919–926. ACM, 2012.
- 2009 M. Song, E. Tilevich, and **W. Tansey**. Trailblazer: A tool for automated annotation refactoring. In *ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications*, pages 813–814. ACM, 2009.
- 2008 **W. Tansey** and E. Tilevich. Annotation refactoring: Inferring upgrade transformations for legacy applications. In *ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications*, volume 43, pages 295–312. ACM, 2008.
- 2008 **W. Tansey** and E. Tilevich. Efficient automated marshaling of C++ data structures for MPI applications. In *IEEE International Symposium on Parallel and Distributed Processing*, pages 1–12. IEEE, 2008.
- 2008 S. Gopal, **W. Tansey**, G.C. Kannan, and E. Tilevich. DeXteR: An extensible framework for declarative parameter passing in distributed object systems. In *ACM/IFIP/USENIX International Conference on Middleware*, pages 144–163. Springer-Verlag New York, Inc., 2008.

Presentations and Talks

- 2019 “Interpreting and Learning from Black Box Models”; Broad Institute series on Models, Inference, and Algorithms; Cambridge, MA.
- 2018 “Dose-Response Modeling in High Throughput Cancer Drug Screening: Probabilistic deep learning with statistical guarantees”; Broad Institute Next Generation in Biomedicine Symposium; Cambridge, MA.
- 2018 “A Deep Learning Approach to Dose-Response Modeling in High Throughput Cancer Drug Screenings”; Nature Conference on Big Data and Cancer; Boston, MA.
- 2018 “Holdout randomization tests: Easy and principled feature selection in black box models”; University of Illinois at Urbana-Champaign; Champaign, IL.

2018	“Holdout randomization tests: Easy and principled feature selection in black box models”; University of Notre Dame; South Bend, IN.
2018	“Holdout randomization tests: Easy and principled feature selection in black box models”; University of Chicago; Chicago, IL.
2018	“Black Box FDR”; ICML’18; Stockholm, Sweden.
2018	“Predictive Modeling of Treatment Efficacy in Cancer Cell Lines”; Department of Statistics, University of Texas at Austin; Austin, TX.
2016	“Diet2Vec: Multi-scale Analysis of Massive Dietary Data”; NIPS Workshop on Machine Learning for Health (poster); Barcelona, Spain.
2015	“False Discovery Rate Smoothing”; Joint Statistical Meetings; Seattle, WA.
2015	“Vector-space MRFs via Exponential Families”; The 32nd International Conference on Machine Learning; Lille, France.
2015	“False Discovery Rate Smoothing”; ISBA Nonparametric Bayes; Raleigh, NC.
2012	“Accelerating Evolution via Egalitarian Social Learning”; International Conference on Genetic and Evolutionary Computation Conference; Philadelphia, PA.
2009	“Annotation Refactoring: Inferring Upgrade Transformations for Legacy Applications”; 24th ACM SIGPLAN Conference on Object Oriented Programming Systems, Languages, and Applications; Nashville, TN.
2008	“Efficient Automated Marshaling of C++ Data Structures for MPI Applications”; IEEE International Symposium on Parallel and Distributed Processing; Miami, FL.

Professional Service

Co-organizer: 2018 & 2019 ICML Workshops on Computational Biology
Reviewer: JASA, AoS, AoAS, Biostatistics, JMLR, NeurIPS
Intellectual Entrepreneurship pre-grad mentor

Other Experience

2014	Data Science Intern, MyFitnessPal
2013–2014	Machine Learning Consultant, Atlas Wearables
2013	Software Engineering Intern, Google
2011–2014	Teaching Assistant, Computer Science Department, UT Austin
2011–2012	Co-founder, Curvio (Tech Startup)
2010	Co-founder, EffectCheck (Tech Startup)
2010–2011	Machine Learning Consultant, Natural Selection Financial
2008–2010	Quantitative Research Associate, Lincoln Vale Adaptive Strategies (Hedge Fund)