Wesley Tansey

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Education

2011–2017	**PhD in Computer Science, University of Texas at Austin**
2006–2008	**MS in Computer Science, Virginia Tech**
2003–2006	**BS in Computer Science, Virginia Tech**

Publications

2018   **Tansey, W.**, K. Pichotta, and J. G. Scott. Leaf-smoothed hierarchical softmax for ordinal prediction. In *Proceedings of the 32nd AAAI Conference on Artificial Intelligence (AAAI'18)*, 2018a.

2018   **Tansey, W.**, J. Thomason, and J. G. Scott. Maximum-variance total variation denoising for interpretable spatial smoothing. In *Proceedings of the 32nd AAAI Conference on Artificial Intelligence (AAAI'18)*, 2018b.

2017   **Tansey, W.**, O. Koyejo, R. Poldrack, and J. Scott. False discovery rate smoothing. *Accepted to the Journal of the American Statistical Association*, 2017b.

2017   **Tansey, W.**, 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, 2017a.

2016   **Tansey, W.**, E. W. Lowe, and J. G. Scott. Diet2vec: Multi-scale analysis of massive dietary data. In *Proceedings of the 2016 NIPS Workshop on Machine Learning for Health*, 2016.

2015   **Tansey, W.**, O.-H. Madrid-Padilla, A. Suggala, and P. Ravikumar. Vector-space markov random fields via exponential families. In *Proceedings of the 32nd International Conference on Machine Learning (ICML'15)*, 2015.

2012   R. Miikkulainen, E. Feasley, L. Johnson, I. Karpov, P. Rajagopalan, A. Rawal, and **Tansey, W.** Multiagent learning through neuroevolution. *Advances in Computational Intelligence*, pages 24–46, 2012.

2012   **Tansey, W.**, E. Feasley, and R. Miikkulainen. Accelerating evolution via egalitarian social learning. In *Proceedings of the Fourteenth International Conference on Genetic and Evolutionary Computation Conference (GECCO 2012)*, pages 919–926. ACM, 2012.

2009   M. Song, E. Tilevich, and **Tansey, W.** Trailblazer: a tool for automated annotation refactoring. In *Proceedings of the 24th ACM SIGPLAN conference companion on Object oriented programming systems languages and applications (OOPSLA 2009)*, pages 813–814. ACM, 2009.

2008   **Tansey, W.** and E. Tilevich. Annotation refactoring: inferring upgrade transformations for legacy applications. In *Proceedings of the 23rd ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA 2008)*, volume 43, pages 295–312. ACM, 2008b.

2008	**Tansey, W.** and E. Tilevich. Efficient automated marshaling of C++ data structures for MPI applications. In *Proceedings of the 2008 IEEE International Symposium on Parallel and Distributed Processing (IPDPS 2008)*, pages 1–12. IEEE, 2008a.
2008	S. Gopal, **Tansey, W.**, G. Kannan, and E. Tilevich. Dexter: An extensible framework for declarative parameter passing in distributed object systems. In *Proceedings of the 9th ACM/IFIP/USENIX International Conference on Middleware*, pages 144–163. Springer-Verlag New York, Inc., 2008.

Professional Service

Reviewer: JASA (Theory & Methods), AoAS, JMLR, NIPS
Co-organizer: 2018 ICML Workshop on Computational Biology
Intellectual Entrepreneurship pre-grad mentor

Presentations and Talks

"Diet2Vec: Multi-scale Analysis of Massive Dietary Data"; NIPS Workshop on Machine Learning for Health (poster); Barcelona, Spain; 2016

"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; 2015

"Accelerating Evolution via Egalitarian Social Learning"; International Conference on Genetic and Evolutionary Computation Conference; Philadelphia, PA; 2012

"Annotation Refactoring: Inferring Upgrade Transformations for Legacy Applications"; 24th ACM SIGPLAN Conference on Object Oriented Programming Systems, Languages, and Applications; Nashville, TN; 2009

"Efficient Automated Marshaling of C++ Data Structures for MPI Applications"; IEEE International Symposium on Parallel and Distributed Processing; Miami, FL; 2008

Experience

2017–Present	**Postdoctoral Research Scientist, Columbia University** Supervisor: Prof. Raul Rabadan. Machine learning and statistics for cancer genomics.
2011–2017	**Graduate Research Assistant, UT Austin** Advisor: Prof. James G. Scott. Focused on high-dimensional inference problems in machine learning.
2016	**Visiting Researcher, Duke University** Supervisor: Prof. Lawerence Carin Investigated scalable Bayesian methods.
2015	**Visiting Researcher, Stanford University** Supervisor: Prof. Russell Poldrack

Worked on large-scale multiple hypothesis testing techniques for fMRI data.

2014	**Data Science Intern, MyFitnessPal** Statistical modeling of millions of nutritional diaries. Created large-scale inference experiments to predict user weight-loss success.
2013–2014	**Machine Learning Consultant, Atlas Wearables** Designed initial exercise recognition algorithm for a new smart watch. Brought a working product to market with excellent recognition performance in the real world.
2013	**Software Engineering Intern, Google** Researched how to improve automated auction bidding. Implemented and evaluated alternative bidding strategy experiments on massive datasets.
2011–2014	**Teaching Assistant, Computer Science Department, UT Austin** Participated in developing course materials for hundreds of students. Helped setup up competition for AI MOOC class taught by Peter Norvig. Directly managed team of four undergrad researchers.
2011–2012	**Co-founder, Curvio Inc.** Built, launched, and iterated a consumer web startup. Organically grew site to 2k uniques/day. Managed a team of 12 remote contractors and hundreds of turkers.
2010	**Co-founder, EffectCheck (Effect Technologies Inc.)** Created novel machine learning algorithms for sentiment analysis. Worked all areas of the business: front-end, back-end, sales, partnerships, and marketing.
2010–2011	**Machine Learning Contractor, Natural Selection Financial** Researched adaptive machine learning models for quantitative finance. Developed algorithms that explore huge data sets and discover exploitable patterns in market prices.
2008–2010	**Research Associate, Lincoln Vale Adaptive Strategies (Hedge Fund)** Researched and implemented machine learning algorithms for automated trading. Developed 20+ real-world trading algorithms, with millions of dollars wagered on their predictions every day.

Awards and Miscellanea

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

Projects available on my website: `http://cs.utexas.edu/~tansey`