

Wesley Tansey

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Research Statement

I'm a Computer Science PhD student at UT Austin. My main research interests are health and wellness applications of machine learning, particularly those involving graphical models, Bayesian statistical methods, and scalable inference algorithms. My current projects include obesity and nutrition modeling, wearable devices for fitness tracking, and large-scale multiple hypothesis testing for fMRI and allele frequency studies. I am passionate about taking my research into the real world and am continually looking for new opportunities to collaborate with tech startups wishing to improve the lives of their users.

Education

2011–Present	Pursuing PhD in Computer Science, University of Texas at Austin Graduate Coursework: <i>Graphical Models, Neural Networks, Bayesian Statistical Methods,, Natural Language Processing, Reinforcement Learning, Statistical Modeling II, MCMC Methods, Mathematical Logic, Computer Security, Programming Languages</i>
2006–2008	MS in Computer Science, Virginia Tech GPA 3.81
2003–2006	BS in Computer Science, Virginia Tech GPA 3.55

Select Papers

2015	W. Tansey, A. Athey, A. Reinhart, and J. G. Scott. Multiscale spatial density smoothing: an application to large-scale radiological survey and anomaly detection. <i>arXiv preprint arXiv:1507.07271</i> , 2015a
2015	W. Tansey, O.-H. Madrid-Padilla, A. Suggala, and P. Ravikumar. Vector-space markov random fields via exponential families. In <i>Proceedings of the 32nd International Conference on Machine Learning (ICML'15)</i> , 2015b
2015	W. Tansey and J. G. Scott. A fast and flexible algorithm for the graph-fused lasso. <i>arXiv preprint arXiv:1505.06475</i> , 2015
2014	W. Tansey, O. Koyejo, R. Poldrack, and J. Scott. False discovery rate smoothing. <i>arXiv preprint arXiv:1411.6144</i> , 2014

Work Experience

Currently	PhD Student, UT Austin Co-advised by Carlos Carvalho, James G. Scott, and Pradeep Ravikumar. Focused on high-dimensional inference problems in machine learning.
2015	Visiting Researcher, Stanford University Worked on large-scale multiple hypothesis testing techniques for fMRI data. Results deployed in neuroimaging experiments and two publicly available software packages.
2014	Data Science Intern, MyFitnessPal Statistical modeling of millions of nutritional diaries. Created large-scale inference experiments to predict user weight-loss success.
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.

Skills

Python, Ruby, R, C#, C/C++, Java, HTML, CSS, and Javascript
Technical writing, team leadership, startups, statistical modeling
Building systems to collect, clean, analyze, and learn from data

Awards and Miscellanea

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>