Wesley Tansey

wesley.tansey@columbia.edu

`wesleytansey.com`

(804)-867-5306

294 Clifton Place Apt 1, Brooklyn, NY 11216

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

2018	**Tansey, W.**, Y. Wang, D. M. Blei, and R. Rabadan. Black box FDR. In *International Conference on Machine Learning*, pages 4874–4883, 2018.
2018	**Tansey, W.**, 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	**Tansey, W.**, Karl Pichotta, and James G Scott. Leaf-smoothed hierarchical softmax for ordinal prediction. In *AAAI Conference on Artificial Intelligence*, 2018.
2018	**Tansey, W.**, J. Thomason, and J. G. Scott. Maximum-variance total variation denoising for interpretable spatial smoothing. In *AAAI Conference on Artificial Intelligence*, 2018.
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, 2017.
2016	**Tansey, W.**, 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	**Tansey, W.**, 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 **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 *International Conference on Genetic and Evolutionary Computation Conference*, pages 919–926. ACM, 2012.
2009	M. Song, E. Tilevich, and **Tansey, W.** 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	**Tansey, W.** 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	**Tansey, W.** 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, **Tansey, W.**, 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)**