Timothy N. Rubin
Data Scientist
Tim.Rubin@gmail.com

EDUCATION

Indiana University	Bloomington, IN
Cognitive Computing Laboratory	2012-Present

University of California, Irvine	Irvine, CA
Ph.D., Psychology	2012
M.A., Psychology	2009
Advisor: Mark Steyvers	

Tufts University	Medford, MA
B.S. Psychology, *Cum Laude*	May 2004
Minor in Cognitive Science	

RESEARCH AND PROFESSIONAL EXPERIENCE

SENIOR DATA SCIENCE MANAGER

States Title	2020 – Present
San Francisco, CA	

DATA SCIENCE TEAM LEAD

Change Healthcare	2018 – 2020
Emeryville, Ca	

SENIOR DATA SCIENTIST

SurveyMonkey	2016 – 2018
San Mateo, Ca	

SENIOR RESEARCH SCIENTIST

Cognitive Computing Laboratory	2013 – 2016
Faculty Researchers: Michael Jones	

DATA SCIENCE CONSULTANT

University of Washington	2012-2013
Consulting work for: David C. Atkins, Michele Bedard-Gilligan	

GRADUATE RESEARCH WORK (FUNDED)

Statistical Learning Methods for Clinical Psychology	2010 - 2012
Faculty Researchers: Mark Steyvers and David Atkins	

Topic Models for Documents and Ontologies	2009 - 2010
Supervising Faculty: Mark Steyvers and Padhraic Smyth	

GRADUATE RESEARCH LABORATORIES

Memory and Decision Laboratory   2008 - 2012
University of California, Irvine
Faculty Researchers: Mark Steyvers and Michael Lee

Movement and Vision Laboratory   2006 - 2008
University of California, Irvine
Faculty Researchers: Charles F. Chubb and Charles E. Wright

Human Information Processing Laboratory   2007 - 2008
University of California, Irvine
Faculty Researcher: George Sperling

ADDITIONAL RESEARCH EXPERIENCE

Undergraduate Thesis Project. *Tufts University*   2003- 2004
Supervising Faculty: Daniel C. Dennett and Phillip Holcomb

Research Internship: Marine Mammal Behavior and Cognition Laboratory   Fall, 2004
Faculty Researcher: Dr. Stan Kuczaj

Research Internship: Kewalo Basin Marine Mammal Laboratory   May-Dec, 2003

RESEARCH GRANTS AWARDED

2014-2015: "Building Statistical Language Processing Algorithms for the Automated Coding of Semi-Structured Interview Data in Clinical Schizophrenia." Indiana University Collaborative Research Grants fund (IUCRG). Funding acceptance rate: <20%. Role: Co-PI. (PI: Michael N. Jones). $65,434

PUBLICATIONS

JA Willits, T Rubin, MN Jones, KS Minor, PH Lysaker (2017). Evidence of disturbances of deep levels of semantic cohesion within personal narratives in schizophrenia. *Schizophrenia Research* 197, 365-369.

Papanikolaou, Y., Foulds, J.R., **Rubin, T.N.**, Tsoumakas, G. (2017) Improving Gibbs Sampling Predictions on Unseen Data for Latent Dirichlet Allocation. *Journal of Machine Learning Research.*

Rubin T.N., Koyejo, S., Jones, M.N. Yarkoni, T, (2016) Generalized Correspondence-LDA Models (GC-LDA) for Identifying Functional Regions in the Brain, *Neural Information Processing Systems (NIPS)*. Barcelona, Spain.

Gruenenfelder, T.M., Recchia, G., **Rubin, T.N.**, Jones, M.N. (2015) Graph-Theoretic Properties of Networks Based on Word Association Norms: Implications for Models of Lexical Semantic Memory, *Cognitive Science*.

Rubin, T.N., Chambers, A., Smyth, P., Steyvers, M., (2012) Statistical Topic Models for Multi-Label Document Classification. *Machine Learning*, special issue on Learning from Multi-Label Data.

Atkins, D.C., **Rubin, T.N.**, Steyvers, M., Doeden, M., Baucom, B.R., & Christensen, A. (2012) Novel methods for modeling couple and family text data: An introduction to topic models. *Journal of Family Psychology*.

Rubin T.N., Kievit-Kylar, B., Willits, J.A., Jones, M.N., (2014) Organizing the space and behavior of semantic models, *36th Annual Conference of the Cognitive Science Society*. Quebec, Canada.

Rubin, T.N., Zeigenfuse, M.D., Steyvers, M., (2011) A Model of Concept Generalization and Feature Representation in Hierarchies, *33rd Annual Conference of the Cognitive Science Society*. (41% acceptance rate for talks).

Rubin, T.N., Steyvers, M., (2009) A Topic Model For Movie Choices and Ratings, *9th International Conference on Cognitive Modeling – ICCM 2009*, Manchester, UK.

Rubin, T.N., Lee, M.D., & Chubb, C.F. (2008) Hierarchical Bayesian modeling of individual differences in texture discrimination. *Proceedings of the 30th Annual Conference of the Cognitive Science Society*.

INVITED TALKS

"Mixture Models for Multi-label Classification and Hierarchical Category Representations". Center for Innovation and Creativity, University of Colorado, Boulder. May 22nd, 2013.

"Machine learning approaches to classification and prediction, and their relevance to cognitive science". *Cognitive lunch talk series*, Indiana University. Aug 22nd, 2012.

"Statistical Topic Models for Multi-Label Document Classification", *AI/ML Weekly Seminar*, Donald Bren School of Information and Computer Sciences, UC Irvine. Jan 24th, 2011.

CONFERENCE TALKS

Rubin T.N., Jones, M.N., Koyejo, O., Yarkoni, T., "Neurotopics: Unsupervised learning for discovering function regions of the brain". *45th Annual Meeting for the Society for Computers in Psychology – SCiP 2015*. Chicago, IL. Presented: November 19th, 2015.

Willits, J.A., **Rubin T.N.**, Jones, M.N., "If you want to know which semantic model is best, don't compare semantic models". *45th Annual Meeting for the Society for Computers in Psychology – SCiP 2015*. Chicago, IL. Presented: November 19th, 2015.

Rubin T.N., Kievit-Kylar, B., Willits, J.A., Jones, M.N., "Organizing the space and behavior of semantic models". *36th Annual meeting of the Cognitive Science Society – CogSci 2014*. Quebec, Canada. Presented: July 26th, 2014.

Rubin T.N., Willits, J.A., Kievit-Kylar, B., Jones, M.N., "An organizing framework for the comparison of semantic models". *47th Annual meeting of the Society For Mathematical Psychology – MathPsych 2014*. Quebec, Canada. Presented: July 21st, 2014.

Rubin, T.N., Molnick J., Wilcox-O'Hearn L.A., Yarkoni, T., M.N. "Neurotopics: Learning the associations between linguistic features and regions of brain activation from a corpus of neuroimaging publications". *43rd Annual Meeting for the Society for Computers in Psychology – SCiP 2013*. Toronto, Canada. Presented: November 14th, 2013.

Willits, J., Kievit-Kylar, B., **Rubin, T.N.**, & Jones, M.N. (2013). "Semanticore.org: A web-based portal for semantic models and psycholinguistic data". *43rd Annual Meeting for the Society for Computers in Psychology – SCiP 2013*. Toronto, Canada. Presented: November 14th, 2013.

Rubin, T.N., Zeigenfuse, M.D., Steyvers, M.,"A Model of Generalization and Feature Representation Across Graph Hierarchies". *44th Annual Meeting of the Society for Mathematical Psychology – MathPsych 2011*. Boston, MA. Presented: July 17th, 2011.

Rubin, TN, Steyvers, M. "Probabilistic Modeling of Human Choices and Preferences using Ratings Data". *The 42nd Annual Meeting of the Society for Mathematical Psychology – MathPsych 2009*. Amsterdam, Netherlands. Presented: August 2nd, 2009.

Rubin, TN, Steyvers, M., "Modeling Movie Choices and Ratings". *The Institute for Mathematical Behavioral Sciences, Graduate Student Conference*. Irvine, CA. Presented: May 13th, 2009.

Rubin, T.N., Chubb, C., Wright, C.E., Sperling, G. "Spatiotemporal Dynamics of the Perception of Dot Displays". University of California Irvine. *Department of Cognitive Sciences, Colloquium*. Irvine, CA. Presented: June 6th, 2008.

CONFERENCE POSTERS

Rubin, T.N., (2017) Modeling Survey Completion Rates and Completion Time using Large-scale Data. *AAPOR 2017*. New Orleans, LA. Presented: May 20th, 2017.

Rubin T.N., Koyejo, S., Jones, M.N. Yarkoni, T, (2016) Generalized Correspondence-LDA Models (GC-LDA) for Identifying Functional Regions in the Brain, *30th Annual Conference on Neural Information Processing Systems (NIPS 2016)*. Barcelona, Spain. Presented: December 7th, 2016.

Rubin T.N., Jones, M.N., Yarkoni, T. (2015) Large-scale functional mapping of brain activity using a joint spatial and semantic topic model, *OHBM 2015*. Honolulu, HI. Presented: June 18th, 2015.

Rubin T.N., Jones, M.N., (2013) Accounting for the nature of human response selection in evaluating semantic models. *43rd Annual Meeting for the Society for Computers in Psychology – SCiP 2013*. Toronto, Canada. Presented: November 14th, 2013.

Rubin T.N., Steyvers M., (2011) Modeling Category Generalization via Distributed Representations Across Graph Hierarchies, *First Southern California Machine Learning Workshop (SoCaML 2011)*. Irvine, CA. Presented: September 9th, 2011.

Rubin T.N., Zeigenfuse M.D., Steyvers M., (2011) A Model of Concept Generalization and Feature Representation in Hierarchies, *33rd Annual Conference of the Cognitive Science Society*. Boston, MA. Presented: July, 22nd, 2011.

Rubin T.N., Lee M.D., DeYoung M., Steyvers M., (2010) Wisdom of the Crowds Effects in Prediction of Future Outcomes; A case study using Fantasy Football Rankings, *43rd Annual Meeting of the Society for Mathematical Psychology* (*SMP 2010*). Portland, OR. Presented: Sunday, August 8th, 2010.

Rubin T.N., Holloway A., Smyth P,. Steyvers M. (2009), Modeling Tag Dependencies in Tagged Documents. *Neural Information Processing Systems Conference; "Applications for Topic Models: Text and Beyond" Workshop*. Whistler, BC. Presented: December 11th, 2009.

Rubin T.N., Steyvers, M., (2009) A Topic Model for Movie Choices and Ratings. *The 9th International Conference on Cognitive Modeling*. Manchester, UK. Presented: July 25th, 2009.

Rubin, T.N., Lee, M.D., & Chubb, C.F. (2008). Hierarchical Bayesian modeling of individual differences in texture discrimination. *The 30th Annual Conference of the Cognitive Science Society*. Washington, DC. Presented: July 24th, 2008.

Rubin T.N., Chubb CF, Wright C.E., Drew S.A., Sperling G.(2008) Visual Perception of Briefly Presented Dot Displays. *Joint Symposium on Neural Computation*. Irvine, CA. Presented: May 31st, 2008.

Rubin T.N., Chubb C.F., Wright C.E., Drew SA, Sperling G. (2008) Spatiotemporal Dynamics of the Perception of Dot Displays. *Vision Sciences Society Meeting* (VSS 2008). Naples, FL. Presented: May 10th, 2008.

Drew S.A., Chubb C.F., Erlich T., Rubin T.N., Sperling G. (2008). Binary versus Graded Filters for Selectively Attending to Dots of Different Contrasts, Vision Sciences Society Meeting. Naples, FL. Presented: May 10th, 2008.

AWARDS, HONORS

Social Sciences Summer Fellowship	2007-2011
Student Travel Award, *44th Annual Meeting of the Society for Mathematical Psychology*	2011
Student Travel Award, *43rd Annual Meeting of the Society for Mathematical Psychology*	2010
Student Travel Award, *42nd Annual Meeting of the Society for Mathematical Psychology*	2009
Cum Laude. B.S. Psychology, Tufts University.	2004
MacJannet Merit Scholarship, Tufts University.	2002
Dean's List, Tufts University.	1999-2004

RELEVANT SKILLS

Programming Languages: Python, SQL, MATLAB, R, LaTeX, BUGS, SPSS , Excel, Java, C/C++ (some), HTML (some).

PROFESSIONAL ACTIVITIES

Ad-Hoc Reviewing, *AI Magazine (*Magazine*)*
Ad-Hoc Reviewing, *Behavior Research Methods (*Journal*)*
Ad-Hoc Reviewing, *Journal of Machine Learning Research (*Journal*)*
Ad-Hoc Reviewing, *Psychological Review (*Journal*)*
Ad-Hoc Reviewing, *Cognitive Science Society* (Conference)
Ad-Hoc Reviewing, *International Conference on Machine Learning, ICML* (Conference)
Ad-Hoc Reviewing, *Transactions on Multimedia Computing, Communications, and Applications (*Journal*)*
Ad-Hoc Reviewing, *Mathematical Problems in Engineering (*Journal*)*

PROFESSIONAL AFFILIATIONS

Cognitive Science Society	Student Member 2008-Present
Society for Mathematical Psychology	Student Member 2009-Present
Vision Sciences Society	Student Member 2007-2008
Society for Neuroscience	Student Member 2007-2008

RELEVANT COURSEWORK

Psych. 200a	Discrete Math and Probability Theory
Psych. 200b	Introduction to Mathematical Statistics
Psych. 200c	Experimental Design
Psych. 205a	Computational and Research Methods Using Matlab
Psych. 205b	Experiments in Matlab
Psych. 237a	Bayesian Cognitive Modeling
Psych. 214	Advanced Cognitive Modeling
Psych. 234a	Mathematical Models of Cognitive Processes
Psych. 212	Learning, Memory and Knowledge Organization
Psych. 214	Decision Making and Problem Solving
Stats. 200 a	Intermediate Probability Theory
CompSci. 273a	Machine Learning
CompSci. 274a	Probabilistic Learning

ADDITIONAL PROGRAMS

Graduate Summer School: Probabilistic Models of Cognition (IPAM 2011)

TEACHING EXPERIENCE

TA, Psychology 114M	Matlab Programming	1 quarter
TA, Social Science 10B	Probability and Statistics	2 quarters
TA, Psychology 21A	Adolescent Psychology	2 quarters
TA, Psychology 191	Language and Brain	1 quarter
TA, Social Science 5D	US/World Geography	1 quarter
TA, Psychology 172AW	American Culture	1 quarter