Keanming Tan

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Contact Information

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Research Interests

High-dimensional data, unsupervised learning, graphical modeling, classification, and empirical Bayes.

Education

University of Washington, Seattle, Washington, U.S.A. **Sep 2011 – Aug 2015**

Doctor of Philosophy (Ph.D.) in Biostatistics

- Advisor: Daniela Witten
- Research Topic: *Graph Estimation and Cluster Analysis in High Dimensions*

Purdue University, West Lafayette, Indiana, U.S.A. **Aug 2007 – May 2011**

Master of Science - Applied Statistics

Bachelor of Science - Actuarial Science & Mathematical Statistics

Honors and Awards

- *Best Poster Presentation - runner up*, UW - MSR Machine Learning Workshop, Feb 2015.
- *Best Oral Presentation - runner up*, WNAR, June 2014.
- *Best Poster Presentation* (as voted by incoming students), UW Biostatistics, September 2012
- *Graduate School Fund for Excellence and Innovation*, University of Washington, July 2012
- *College of Science Outstanding Junior in Statistics*, Purdue University, May 2009
- *Ruzicka College of Science Research Award*, Purdue University, May 2008

Teaching

Biostatistics 571: Advanced Regression Methods for Correlated Data **Winter 2014**
Supervised by Adam Szpiro

Referee Service

Biostatistics; Journal of Computational and Graphical Statistics; Journal of the American Statistical Association (Theory and Methods)

Department Service

Admission committee for prospective MS/PhD students (2013-2014)

Publication [† indicates joint first authorship.]

K.M. Tan and D.M. Witten. Statistical Properties of Convex Clustering. (Submitted)

R.F. Barber, M. Drton, and *K.M. Tan*. Laplace Approximation in High-dimensional Bayesian Regression. (Submitted)

K.M. Tan, N. Simon and D.M. Witten. Selection Bias Correction and Effect Size Estimation under Dependence. (Submitted)

A. Sunshine, C. Payen, G. Ong, I. Liachko, *K.M. Tan* and M. Dunham (2015). The Fitness Consequences of Aneuploidy are Driven by Condition-dependent Gene Effects. (Accepted in PLOS Biology)

K.M. Tan, A. Shojaie and D.M. Witten (2015). The Cluster Graphical Lasso for Improved Estimation of Gaussian Graphical Models. *Computational Statistics and Data Analysis* 85:23-36.

K.M. Tan, P. London, K. Mohan, S-I. Lee, M. Fazel, and D.M. Witten (2014). Learning Graphical Models With Hubs. *Journal of Machine Learning Research* 15(Oct):3297-3331.

K.M. Tan and D.M. Witten (2014). Sparse Biclustering of Transposable Data. *Journal of Computational and Graphical Statistics* (23)4:985-1008.

K.M. Tan†, A. Petersen†, and D.M. Witten (2014). Classification for RNA-seq Data. Statistical Analysis of Next Generation Sequencing Data, 219-246.

B. Xi, *K.M. Tan* and C. Liu (2013). Logarithmic Transformation Based Gamma Random Number Generators. *Journal of Statistical Software* 55(4).

M. Tang†, *K.M. Tan*†, X.L. Tan, L. Sael, M. Chitale, J. Esquivel-Rodriguez, and D. Kihara (2013). *Graphical models for protein function and structure predictions.* Biological Knowledge Discovery Handbook: Preprocessing, Mining and Postprocessing of Biological Data, M. Elloumi and A.Y. Zomaya Edition, Wiley Series in Bioinformatics.

D. Schrempp, M. Childress, J. Stewart, T. Leach, *K.M. Tan*, A. Abbo, A. Gortari, P. Bonney and D. Knapp (2013). Metronomic Administration of Chlorambucil for Treatment of Dogs with Urinary Bladder Transitional Cell Carcinoma. *Journal of the American Veterinary Medical Association* 242(11): 1534-1538.

Knapp, DW., Henry, CJ., Widmer, WR., *K.M. Tan*, Moore, GE., Ramos-Vara, JA., Lucroy, MD., Greenberg, CB., Greene, SN., Abbo, AH., Hanson, PD., Alva, R., and Bonney, PL (2013). Randomized Trial of Cisplatin versus Firocoxib versus Cisplatin/Firocoxib in Dogs with Transitional Cell Carnicoma of the Urinary Bladder. *Journal of Veterinary Internal Medicine*, 27(1): 126-133.

Arnold, E., Childress, M., Fourez, L., *K.M. Tan*, Stewart, J., Bonney, P., and Knapp, D (2011). Clinical Trial of Vinblastine in Dogs with Transitional Cell Carcinoma of the Urinary Bladder. *Journal of Veterinary Internal Medicine* 25(6): 1385-1390.

R Package

sparseBC, an R library for performing sparse biclustering, available at http://cran.r-project.org/web/packages/sparseBC/index.html.
Reference: *K.M. Tan* and D.M. Witten (2014). Sparse Biclustering of Transposable Data. *Journal of Computational and Graphical Statistics* (23)4:985-1008.

hglasso, an R library for estimating network with hubs, available at http://cran.r-project.org/web/packages/hglasso/index.html
Reference: *K.M. Tan*, P. London, K. Mohan, S-I. Lee, M. Fazel, and D.M. Witten (2014). Learning Graphical Models With Hubs. *Journal of Machine Learning Research* 15(Oct):3297-3331.

Talks

K.M. Tan, K. Mohan, P. London, M. Fazel, S-I. Lee, and D. Witten. (2015). Learning Graphical Models with Hubs, *UW - MSR Machine Learning Workshop Spotlight Presentation*, Redmond, WA.

K.M. Tan, N. Simon, D. Witten. (2014). Selection Bias Correction and Effect Size Estimation under Dependence, *Annual Biostatistics Department Retreat*, Semiahmoo, WA.

K.M. Tan, N. Simon, D. Witten. (2014). Selection Bias Correction and Effect Size Estimation under Dependence, *WNAR 2014*, Honolulu, HI.

K.M. Tan, K. Mohan, P. London, M. Fazel, S-I. Lee, and D. Witten. (2013). Hub Graphical Lasso for modeling network with hubs, *WNAR 2013*, LA, CA.

Poster Presentations

K.M. Tan, K. Mohan, P. London, M. Fazel, S-I. Lee, and D. Witten. (2015). Learning Graphical Models with Hubs, *UW - MSR Machine Learning Workshop*, Redmond, WA.

K.M. Tan, D. Witten. (2012). Sparse Biclustering of Transposable Data, *Annual Biostatistics Department Retreat*, Leavenworth, WA.

K.M. Tan, D. Witten. (2012). Sparse Biclustering of Transposable Data, *Joint Statistical Meetings*, San Diego, CA.

K.M. Tan, B. Xi, and C. Liu. (2010). Two New Ratio-of-Uniforms Gamma Random Number Generators, *Purdue SIAM Computational Science and Engineering Student Conference*, Purdue University, IN.