Yang Ni – Curriculum Vitae

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Research Interests

Methods *Primary* - Graphical Models, Bayesian Nonparametrics, Big Data Computation, Data Integration

Secondary - Variable Selection, Clustering, Random Networks, Machine Learning

Science *Primary* - Precision Science (Medicine, Nutrition, Education, etc.), Electronic Health Records, Single-cell RNA-seq, Microbiome

Secondary - Tumor Heterogeneity, Biomarker Detection, Disease Surveillance, Clinical Trial Design

Education

2012-2015 PhD in Statistics - Rice University
Thesis Advisors - Francesco C. Stingo and Veerabhadran Baladandayuthapani

2009-2011 MS in Mathematics - Clemson University

2005-2009 BS in Mathematics - Fudan University

Academic Positions

2018-present Assistant Professor - Department of Statistics, Texas A&M University

2016-2018 Postdoctoral Fellow - The University of Texas at Austin
Mentor - Peter Müller

Current Grants

07/2019-06/2022 **NSF DMS-1918851 (PI)**
Collaborative Research: New Bayesian Methods for Modeling the Effect of Antiretroviral Drugs on Depressive Symptomatology in HIV Patients

Publications

$\star$ = student/postdoc $\quad$ $\S$ = single/leading statistician $\quad$ $\dagger$ = corresponding author

1. **Ni, Y.**†, Müller, P., and Ji, Y. (2019+) "Bayesian Double Feature Allocation for Phenotyping with Electronic Health Records." *Journal of the American Statistical Association* (in press).

2. **Ni, Y.**†, Müller, P., Diesendruck, M., Williamson, S., Zhu, Y., and Ji, Y. (2019+) "Scalable Bayesian Nonparametric Clustering and Classification." *Journal of Computational and Graphical Statistics* (in press).

3. Ge, T., Chen, C.Y., **Ni, Y.**§, Feng, Y.C.A., Smoller J.W. (2019) "Polygenic Prediction via Bayesian Regression and Continuous Shrinkage Priors". *Nature Communications*, 10(1) 1776. **Selected as Editors' Highlights**.

4. **Ni, Y.**, Müller, P., Shpak M., and Ji, Y. (2019) "Parallel-Tempered Feature Allocation for Large-scale Tumor Heterogeneity with Deep Sequencing Data." *In: Liu R., Tsong Y. (eds) Pharmaceutical Statistics. MBSW 2016. Springer Proceedings in Mathematics & Statistics, vol 218. Springer, Cham.*

5. **Ni, Y.**[†], Stingo, F. C., Ha, M. J., Akbani, R., and Baladandayuthapani, V. (2019) "Bayesian Hierarchical Varying-sparsity Model with Application to Cancer Proteo-genomics." *Journal of the American Statistical Association*, 114(525) 48-60.

6. **Ni, Y.**[†], Ji, Y., and Müller, P. (2018) "Reciprocal Graphical Models for Integrative Gene Regulatory Network Analysis." *Bayesian Analysis*, 13(4), 1095–1110.

7. **Ni, Y.**, Stingo, F. C., and Baladandayuthapani, V. (2019) "Bayesian Graphical Regression." *Journal of the American Statistical Association*, 114(525) 184-197.

8. **Ni, Y.**[†], Müller, P, Zhu, Y, and Ji, Y. (2018) "Heterogeneous Reciprocal Graphical Models." *Biometrics*, 74(2), 606-615.

9. **Ni, Y.**[†], Müller, P., Lin, W., and Ji, Y. (2018) "Bayesian Graphical Models for Computational Network Biology." *BMC Bioinformatics*, 19(3), 63.

10. Shpak M., **Ni, Y.**[§], Lu, J., Müller, P. (2017) "Variance in Estimated Pairwise Genetic Distance Under High versus Low Coverage Sequencing: the Contribution of Linkage Disequilibrium." *Theoretical Population Biology*, 117, 51-63.

11. **Ni, Y.**, and Müller, P. (2017), Discussion of "Sparse Graphs Using Exchangeable Random Measures." by Caron, F., and Fox, E. *Journal of the Royal Statistical Society: Series B.*

12. **Ni, Y.**, Stingo, F. C., and Baladandayuthapani, V. (2017) "Sparse Multi-dimensional Graphical Models: A Unified Bayesian Framework." *Journal of the American Statistical Association*, 112(518) 779-793.

13. **Ni, Y.**, Stingo, F.C., and Baladandayuthapani, V. (2015), "Bayesian Nonlinear Model Selection for Gene Regulatory Networks." *Biometrics*, 71(3) 585-595.

14. Guo, W., **Ni, Y.**, and Ji, Y. (2015), "TEAMS: Toxicity- and Efficacy-based Dose Insertion Design with Adaptive Model Selection for Phase I/II Dose-Escalation Trials in Oncology" *Statistics in Biosciences*, 7(2) 432-459.

15. **Ni, Y.**, Marchetti, G. M., Baladandayuthapani, V, and Stingo, F. C. (2015), "Bayesian Approaches for Large Biological Networks." in Nonparametric Bayesian Methods in Biostatistics and Bioinformatics, Mitra, R. and Müller, P. (eds), Springer-Verlag.

16. **Ni, Y.**, Stingo, F. C., and Baladandayuthapani, V. (2014), "Integrative Bayesian Network Analysis of Genomic Data." *Cancer Informatics*, 13(s2) 39-48.

Submitted Papers

1. **Ni, Y.**[†], Ji, Y., Müller, P. "Consensus Monte Carlo for Random Subsets using Shared Anchors" invited revision from *Journal of Computational and Graphical Statistics.*

2. Wang, Z., **Ni, Y.** "Doubly-unsupervised Learning of Deep Representations and Image Clusters via Bayesian Nonparametrics." Submitted.

3. Wang, Z., Jing, B., **Ni, Y.**, Dong, N., Xie, P., Xing, E.P. "Relationship-aware Multi-class Adversarial Domain Adaptation." Submitted.

4. Vickman, R., Broman, M., Lanman N., Franco O., Sudyanti, P., **Ni, Y.**[§], et al. "Heterogeneity of Human Prostate Carcinoma-Associated Fibroblasts Implicates a Role for Subpopulations in Myeloid Cell Recruitment." Submitted.

Teaching Experience

Fall 2019 STAT 211 - Principles of Statistics I
Department of Statistics, Texas A&M University

Summer 2019 Short Course - Bayesian Parametric and Nonparametric Modeling
Institute of Statistics and Big Data (ISBD), Renmin University of China

Spring 2019 STAT 639 - Data Mining and Analysis
Department of Statistics, Texas A&M University

Fall 2018 STAT 211 - Principles of Statistics I
Department of Statistics, Texas A&M University

Summer 2018 Short Course - Bayesian Modeling and Inference
Institute of Statistics and Big Data (ISBD), Renmin University of China

Current PhD Students

2019-present Fangting Zhou

2019-present Brian Kidd

2019-present Junsouk Choi

Current Undergraduate Students

2019-present Sahil Patel (Major: CS)

PhD Student Committee

Yabo Niu (Graduated in 2019), Huiya Zhou, Eric Chuu, Patrick Ding, Vixey Fang (Department of Epidemiology and Biostatistics), Licheng Fan (Department of Chemistry)

Master Student Committee

Ya Zhou, Xin Jin

Referee Experience

Journal of the Royal Statistical Society (Series B); Journal of the American Statistical Association; Annals of Applied Statistics; Biometrics; Bayesian Analysis; Bioinformatics; Journal of Multivariate Analysis; Statistics and Its Interface; Statistics in Medicine; Statistical Analysis and Data Mining; Journal of Statistical Distributions and Applications; Stat; PLOS One; Springer; Biometrical Journal; Cancer Informatics; Epidemiology; American Statistician; Computers in Biology and Medicine

Professional Service

2019-present Secretary, The Southeastern Texas Chapter of the American Statistical Association (SETCASA)

Organizing Experience

Invited Session - ISBA International Conference, 2020

Student Paper Competition Committee - ICSA Applied Statistics Symposium, 2020

Invited Sessions - The IISA International Conference on Statistics, 2019

Faculty Advisory Committee - Texas A&M University Datathon, 2019

Organizing Committee - Symposium on Bioinformatics: Research and Application, 2019

Technical Program Committee - CNB-MAC Workshop, 2019

Organizing Committee - SETCASA Student Poster Competition, 2019

Technical Program Committee - CNB-MAC Workshop, 2018

Invited Session - 4th International Conference on Big Data and Information Analytics, 2018

Awards

2018	Junior Travel Support - 20th Meeting of New Researchers in Statistics and Probability
2018	NSF Junior Travel Support - ISBA World Meeting, Edinburgh, UK
2017	Travel Support - Rising Stars Symposium in Data Science, The University of Chicago
2017	Savage Award (honorable mention) - Best Bayesian Dissertations
2017	Travel Support - The Third Annual Kliakhandler Conference on Bayesian Inference in Statistics and Statistical Genetics
2017	Junior Travel Support - 19th Meeting of New Researchers in Statistics and Probability
2017	Junior Travel Support - CBMS Regional Conference on Spatial Statistics
2016	Young Researcher Award - 10th ICSA International Conference, Shanghai, China
2016	NSF Junior Travel Support - ISBA World Meeting, Sardinia, Italy
2016	Student Paper Award - The Section on Statistical Learning and Data Mining (SLDM) of the American Statistical Association (ASA), the Joint Statistical Meetings
2015	Jiann-Ping Hsu Pharmaceutical and Regulatory Sciences Award - Joint 24th ICSA Applied Statistics Symposium and 13th Graybill Conference
2015	Young Investigator Travel Award - G70 Conference, Durham, North Carolina
2014	Laplace Award (co-winner) - awarded to top papers among the student travel award winners from the Section on Bayesian Statistical Science (SBSS) of the American Statistical Association (ASA), the Joint Statistical Meetings
2012-2013	Fellowship - Rice University, Department of Statistics

Invited Presentations

2019	The 2019 IISA Conference, Mumbai, India TBA
2019	The 11th ICSA International Conference, Hangzhou, Zhejiang, China *Covariate-dependent graphs with application in cancer genomics*

2019 12th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics), London, UK
Covariate-dependent graphical models

2019 12th International Conference on Bayesian Nonparametrics, Oxford, UK
Double Feature Allocation for Phenotyping with Electronic Health Records Data

2019 Department of Statistics, Chinese University of Hong Kong, Hong Kong
Double Feature Allocation for Phenotyping with Electronic Health Records Data

2019 Big Data Seminar, College of Veterinary Medicine, TAMU
Scalable Bayesian Clustering and Classification with Application to EHR

2018 4th International Conference on Big Data and Information Analytics, Houston
Scalable Bayesian Clustering and Classification with Application to EHR

2018 Electrical & Computer Engineering Bio-Seminar, TAMU
Applications of Network Models in Biostatistics and Bioinformatics

2018 Joint Statistical Meetings, Vancouver, Canada
Heterogeneous Reciprocal Graphical Models

2018 ISBA, Edinburgh, UK
Heterogeneous Reciprocal Graphical Models

2018 EcoSta, Hong Kong, China
Scalable Bayesian Nonparametric Clustering and Classification

2018 IISA International Conference on Statistics, Gainesville, FL
Scalable Bayesian Nonparametric Clustering and Classification with Application to Medical Records Data

2018 Columbia University (Biostat), University of Illinois Urbana-Champaign,
John Hopkins University (Biostat), Texas A&M University, University of Minnesota,
Iowa State University, University of Michigan (Biostat)
Job Talk: Integrative Directed Cyclic Graphical Models with Heterogeneous Samples

2017 UT MD Anderson Cancer Center (Biostat), University of Florida,
University of Waterloo, UTHealth School of Public Health (Biostat)
Job Talk: Integrative Directed Cyclic Graphical Models with Heterogeneous Samples

2017 Department of Statistics at Federal University of São Carlos, Brazil (Teleconference)
Integrative Directed Cyclic Graphical Models with Heterogeneous Samples

2017 Rising Stars Symposium in Data Science, The University of Chicago
Heterogeneous Directed Cyclic Graphs

2017 Third Annual Kliakhandler Conference on Bayesian Inference in Statistics and Statistical Genetics, Houghton, MI
Heterogeneous Directed Cyclic Graphs

2016 10th ICSA International Conference, Shanghai, China
Bayesian Graphical Regression

2015 Joint 24th ICSA Applied Statistics Symposium and 13th Graybill Conference, Fort Collins, CO
Bayesian Nonlinear Model Selection for Gene Regulatory Networks

2014 University of Texas M.D. Anderson Cancer Center
Multi-dimensional Graphical Models

2014 Hackathon: DREAM 9 Acute Myeloid Leukemia Outcome Prediction Challenge, Houston, TX
Bayesian Nonlinear Model Selection for Gene Regulatory Networks

2013 University of Texas M.D. Anderson Cancer Center
Introduction to Graphical Models (jointly with Dr. Francesco C. Stingo)

Contributed Presentations

2019 Joint Statistical Meetings, Denver, CO
Double Feature Allocation for Phenotyping with Electronic Health Records Data

2018 ENAR, Atlanta, Georgia
Scalable Bayesian Nonparametric Clustering and Classification

2017 8th ACM Conference on Bioinformatics, Computational Biology, and Health Informatics, Boston, MA
Heterogeneous Directed Cyclic Graphs

2017 Joint Statistical Meetings, Baltimore, MD (Savage Award SPEED Section)
Heterogeneous Directed Cyclic Graphs

2017 19th Meeting of New Researchers in Statistics and Probability, Baltimore, MD (Poster)
Heterogeneous Directed Cyclic Graphs

2017 WNAR, Santa Fe, NM
Heterogeneous Reciprocal Graphical Models

2016 Joint Statistical Meetings, Chicago, IL
Sparse Multi-dimensional Graphical Models: A Unified Bayesian Framework

2016 ISBA, Sardinia, Italy (Poster)
Sparse Multi-dimensional Graphical Models: A Unified Bayesian Framework

2015 iBRIGHT, Houston, TX (Poster)
Sparse Multi-dimensional Graphical Models: A Unified Bayesian Framework

2015 Joint Statistical Meetings, Seattle, WA
Sparse Multi-dimensional Graphical Models: A Unified Framework

2015 G70 Conference, Duke University (Poster)
Bayesian Nonlinear Model Selection for Gene Regulatory Networks

2014 Department of Statistics, Rice University
Multi-dimensional Graphical Models

2014 Joint Statistical Meetings, Boston, MA
Bayesian Nonlinear Model Selection for Gene Regulatory Networks

2014 7th Annual Bayesian Biostatistics and Bioinformatics Conference, Houston, TX (Poster)
Bayesian Nonlinear Model Selection for Gene Regulatory Networks