Qian Qin

Contact Information

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Education

August 2019	PhD in Statistics, University of Florida (Advisor: James P. Hobert)
May 2017	MStat in Statistics, University of Florida
July 2014	BS in Physics, Peking University BEcon in Economics (double major), Peking University

Professional Experience

August 2019 to Present	Assistant Professor, University of Minnesota TC, School of Statistics

Grants

PI, "Large sample analysis of Markov chain Monte Carlo methods in Bayesian statistics from a frequentist perspective". National Science Foundation, 2021-2024.

Papers

Qin, Q. and Wang, G. (2022+). Spectral telescope: Convergence rate bounds for random-scan Gibbs samplers based on a hierarchical structure, *arXiv* preprint.

Qin, Q. (2022+). Analysis of two-component Gibbs samplers using the theory of two projections, *arXiv* preprint.

Qin, Q. and Hobert, J. P. (2022). Geometric convergence bounds for Markov chains in Wasserstein distance based on generalized drift and contraction conditions, *Annales de l'Institut Henri Poincaré (B) Probabilités et Statistiques*, **58**: 872-889.

Qin, Q. and Jones, G. L. (2022). Convergence rates of two-component MCMC samplers, *Bernoulli*, **28**: 859-885.

Jones, G. L. and Qin, Q. (2022). Markov chain Monte Carlo in practice, *Annual Review of Statistics and Its Application*, **9**: 557-578.

Qin, Q. and Hobert, J. P. (2022). Wasserstein-based methods for convergence complexity analysis of MCMC with applications, *Annals of Applied Probability*, **32**: 124-166.

Qin, Q. and Hobert, J. P. (2021). On the limitations of single-step drift and minorization in Markov chain convergence analysis, *Annals of Applied Probability*, **31**: 1633-1659.

Qin, Q., Hobert, J. P. and Khare, K. (2019). Estimating the spectral gap of a trace-class Markov operator, *Electronic Journal of Statistics*, **13**: 1790-1822.

Qin, Q. and Hobert, J. P. (2019). Convergence complexity analysis of Albert and Chib's algorithm for Bayesian probit regression, *Annals of Statistics*, **47**: 2320-2347.

Qin, Q. and Hobert, J. P. (2018). Trace-class Monte Carlo Markov chains for Bayesian multivariate linear regression with non-Gaussian errors, *Journal of Multivariate Analysis*, **166**: 335-345.

Hobert, J. P., Jung, Y. J., Khare, K. and Qin, Q. (2018). Convergence analysis of MCMC algorithms for Bayesian multivariate linear regression with non-Gaussian errors, *Scandinavian Journal of Statistics* **45**: 513-533.

Seminar Talks

"Gibbs samplers with two components: Convergence rate and asymptotic variance". UP-STAT 2022 Hybrid Conference, virtual, May 4, 2022; ICSA 2022 Applied Statistics Symposium, Gainesville, FL, US, June 21, 2022; ICSA 2022 China Conference, virtual, June 30, 2022.

"Analysis of two-component Gibbs samplers using the theory of two projections". Rutgers University-Camden, Camden, NJ, USA, February 18, 2022; University of Bristol, virtual, March 18, 2022; Purdue University, virtual, March 25, 2022; Pennsylvania State University, State College, PA, USA, March 31, 2022; Renmin University of China, virtual, April 22, 2022.

"Convergence Rates of Two-Component MCMC Samplers". ISBA 2021, virtual, June 28, 2021.

"Limitations of single-step drift and minorization in convergence analysis of Markov chains". Joint Statistical Meeting 2020, pre-recorded, August 3, 2020; MCQMC 2020, pre-recorded, August 10, 2020.

"Geometric convergence bounds for Markov chains in Wasserstein distance". Guangxi Normal University, Guilin, Guangxi, China, December 30, 2019; Bayes Comp, Gainesville, FL, USA, January 10, 2020.

"Convergence complexity analysis of MCMC". CMStatistics, London, UK, December 16, 2019. IISA 2021 Conference, virtual, May 20, 2021.

"Convergence complexity analysis of Albert and Chib's algorithm". Joint Statistical Meetings, Vancouver, BC, Canada, August 1, 2018.

"Estimating the spectral gap of a trace-class Markov operator". LMS-EPSRC Durham Symposium: Markov processes, mixing times and cutoff, Durham, UK, July 28, 2017.

Posters

"Analysis of two-component Gibbs samplers using the theory of two projections". IMS New Researchers Conference, George Mason University, Fairfax, VA, USA, August 4, 2022.

"Estimating the spectral gap of a trace-class Markov operator". Statistics, Monte Carlo, and so much more: a conference in honor of Charlie Geyer, University of Minnesota, Minneapolis, MN, USA, April 6, 2018.

Teaching Experience

STAT 8111: Mathematical Statistics I, University of Minnesota TC, Fall 2021

STAT 4102: Theory of Statistics II, University of Minnesota TC, Spring 2020 (online), Spring 2021 (online), Fall 2021, Spring 2022.

STAT 4101: Theory of Statistics I, University of Minnesota TC, Fall 2019, Fall 2020 (online)

STA 4321: Introduction to Probability, University of Florida, Summer 2019

STA 3024: Introduction to Statistics II, University of Florida, Spring 2017

Updated on August 25, 2022.