SEN NA

Department of Statistics, University of Chicago

Jones Laboratory, Suite 222, 5747 South Ellis Avenue, Chicago, IL 60637, USA

Phone: 773-580-6556   Email: senna@uchicago.edu

Education

The University of Chicago   *Aug. 2016 – June 2021 (expected)*
- Ph.D. candidate in the Department of Statistics
- Advisors: Prof. *Mihai Anitescu* and Prof. *Mladen Kolar*
- GPA: 4.0

Nanjing University   *Sept. 2012 – June 2016*
- Bachelor of Science, Mathematics
- GPA: 3.9

University of California, Davis   *Mar. 2015 – Oct. 2015*
- Exchange student in the Department of Statistics
- Advisors: Prof. *Jane-Ling Wang*, Prof. *Hans-Georg Mller*, Prof. *Christiana Drake*
- GPA: 4.0

Research Interests

Theoretical foundation of data science, high-dimensional statistics, semiparametric modeling, graphical model, nonlinear and nonconvex optimization, dynamic programming, control theory.

Research Experiences

Argonne National Laboratory
Mathematics and Computer Science Division
- Givens Associate   *June - Sept. 2018, 2019*
- Project: sensitivity analysis of long-horizon nonlinear dynamic programming and its application in electrical transmission planning; theoretical convergence guarantee of online, fast model predictive control and its implementation in Julia/JuMP.

- WJ Cody Associate   *June - Sept. 2020*
- Project: convergence analysis of temporal decomposition procedure on nonlinear dynamic programming and its implementation.

Publications and preprints

(1) **Sen Na**, Yuwei Luo, Zhuoran Yang, Zhaoran Wang, Mladen Kolar, "Semiparametric Nonlinear Bipartite Graph Representation Learning with Provable Guarantees," *International Conference on Machine Learning (ICML), 2020.*

(2) **Sen Na**, Mladen Kolar, "High-dimensional Index Volatility Models via Stein's Identity," *To appear in Bernoulli, 2020.*

(3) **Sen Na**, Mladen Kolar, Oluwasanmi Koyejo, "Estimating Differential Latent Variable Graphical Models with Applications to Brain Connectivity," *To appear in Biometrika, 2020.*

(4) **Sen Na**, Mihai Anitescu, "Exponential Decay in the Sensitivity Analysis of Nonlinear Dynamic Programming," *SIAM Journal on Optimization 30(2), 1527 –1554, 2020.*

(5) **Sen Na**, Zhuoran Yang, Zhaoran Wang, Mladen Kolar, "High-dimensional Varying Index Coefficient Models via Stein's Identity," *Journal of Machine Learning Research (20), 2019.*

(6) Mingyuan Ma, **Sen Na**, Hongyu Wang, Jin Xu, "AEGCN: An Autoencoder-Constrained Graph Convolutional Network," *Under review.*

(7) **Sen Na***, Sungho Shin*, Mihai Anitescu, Victor M. Zavala (equal contribution), "Overlapping Schwarz Decomposition for Nonlinear Optimal Control," *Under review.*

(8) **Sen Na**, Mihai Anitescu, "Superconvergence of Online Optimization for Model Predictive Control," *Under review.*

(9) Mingyuan Ma, **Sen Na**, Cong Xu, Xin Fan, "The Graph-based Broad Behavior-Aware Recommendation System for Interactive News," *Under review.*

(10) **Sen Na**, Mingyuan Ma, Mladen Kolar, "Scalable Peaceman-Rachford Splitting Method with Proximal Terms."

(11) **Sen Na**, Cho-Jui Hsieh, "Sparse Learning with Semi-Proximal-Based Strictly Contractive Peaceman-Rachford Splitting Method."

Teaching Experiences

Teaching Assistant
- STAT 234: Statistical Models and Method, by Prof. Yali Amit and Linda Brant Collins
  Winter 2016, Spring 2017, Winter 2017
- STAT 244: Statistical Theory and Method, by Prof. Tracy Zheng
  Autumn 2017
- STAT 315: Stochastic Simulation, by Prof. Daniel Sanz-Alonso
  Spring 2019
- STAT 376: Machine Learning and Large-Scale Data Analysis, by Prof. Yali Amit
  Spring 2020

Research Assistant: supervised by Prof. Mihai Anitescu, Autumn and Winter in 2018 and 2019

Awards

Harper Dissertation Fellowship, UChicago   *2020*
Harper Fellowships are one of the highest honors given to graduate students at the University of Chicago.

Bao-steel Scholarship, Nanjing University   *2016*
This award is given to top 3 students collegewide for academic performance.

Excellent Graduate, Nanjing University   *2016*

Exchange Program Scholarship, UC Davis   *2015*

Du Xia Scholarship, Nanjing University   *2014*

Professional services

- Referee of SIAM Journal on Optimization
- Reviewer of NeruIPS, ICML, IJCAI