

SEN NA

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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 applications on power grid; convergence analysis of online, real-time 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,” *Biometrika* 09, 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) Mingyuan Ma, **Sen Na**, Hongyu Wang, “AEGCN: An Autoencoder-Constrained Graph Convolutional Network,” *To appear in Neurocomputing*, 2020.
- (6) **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.
- (7) **Sen Na**, Mihai Anitescu, “Superconvergence of Online Optimization for Model Predictive Control,” *In revision at IEEE Transactions on Automatic Control*.
- (8) **Sen Na***, Sungho Shin*, Mihai Anitescu, Victor M. Zavala (equal contribution), “Overlapping Schwarz Decomposition for Nonlinear Optimal Control,” *Under review at IEEE Transactions on Automatic Control*.
- (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

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| Harper Dissertation Fellowship , UChicago | 2020 |
| <i>Harper Fellowship is one of the highest honors given to graduate students at the University of Chicago.</i> | |
| Bao-steel Scholarship , Nanjing University | 2016 |
| <i>This award is given to top 3 students collegewide for academic performance.</i> | |
| 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, ICLR, IJCAI, AISTATS

REFEREES

- Prof. Mihai Anitescu (anitescu@mcs.anl.gov)
- Prof. Mladen Kolar (mladen.kolar@chicagobooth.edu)
- Prof. Lek-Heng Lim (lekheng@statistics.uchicago.edu)