YANG GUO

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EDUCATION

University of Wisconsin-Madison
Ph.D. in Computer Science, Expected May 2023
Cornell University, College of Arts & Sciences
B.A. in Statistics and Economics, *Summa Cum Laude*, May 2018
Exceptional Graduating Senior • Omicron Delta Epsilon Honor Society

RELEVANT EXPERIENCE

Schools of Operations Research and Information Engineering, Cornell University
Research Assistant for Professor Madeleine Udell Sept. 2017 – Present
• Designed the first sketching-based streaming model for Tucker decomposition, an important low-rank tensor approximation algorithm
• Conducted rigorous mathematical analysis on the convergence guarantee of our algorithm, which achieves similar bounds as other state-of-the-art tensor approximation algorithms
• Developed an open-source package in python and performed comprehensive simulation study with synthetic datasets and applied it to real-world weather and combustion datasets
• Submitted to AISTATS 2019

• Developed the Tensor Random Projection based on Khatri-Rao product, and reduced the storage cost for the random map from O(n) to O(log(n))
• Created the variance reduction method for random projection, and enabled the Tensor Random Projection to achieve same the accuracy as conventional methods with much smaller storage cost
• Accepted to NIPS Relational Representation Learning workshop 2018

Department of Statistical Sciences, Cornell University Feb. 2017 – Dec. 2017
Research Assistant for Professor Sumanta Basu
• Examined the possible extensions of the de-biased inference to regularized M-estimators with geometrically decomposable regularizers, with applications in generalized lasso and generalized linear model with l_1 penalty
• Derived the convex optimization program and confidence interval formulation for this estimator
• Implemented the algorithm with *convexjl* from Julia and *simulator* from R and numerically evaluated the type I/II error of the inference procedure

Cornell Statistics Consulting Unit, Cornell University Feb. 2017 – May 2017
Statistical Consultant
• Assisted the client to analyze the effect of biochar and sidedress application on growth of maize with the data from Cornell Musgrave research farm with JMP and R
• Found out the optimal combination for maize production and evaluated the finding with multiple test correction
• Presented the finding to the client using a formal report and presentation

LEADERSHIP

Cornell Chinese Drama Society Sept. 2014 – May 2015
Founder and Lighting Designer
• Designed and managed the stage lighting for two modern Chinese dramas in the college theater
• Contacted and successfully built long-term partnership with the drama societies in Princeton and Columbia University

ACTIVITIES

The Statistical and Applied Mathematical Sciences Institute (SAMSI) Workshop: Statistics for Climate Research • Cornell Scientific Software Club • Camp Davis Sustainable and Fossil Energy Program (University of Michigan) • International Student Admissions Ambassadors

SKILLS

Software: Microsoft Word • Excel • PowerPoint • Adobe Photoshop • JMP
Programming: Python • R • Java • Ocaml • Julia • Stata • Latex • Matlab • Mathematica • Unix
Language: Native in Chinese