

Nathaniel Pritchard

September 2023

CONTACT	1300 University Ave., 1220 Medical Sciences Center, Madison, WI 53706 Primary Email: npritchard@wisc.edu Website: https://npritch928.github.io
RESEARCH INTERESTS	Generalized Linear Models. High Performance Computing. Bayesian Statistics. Iterative Solvers. Optimization. Preconditioners. Random Sketching. Statistical Computation.
EDUCATION	<div><div>University of Wisconsin - Madison, Ph.D., Statistics Adviser: Vivak Patel</div><div>Madison, WI August 2018 - May 2024</div></div> <div><div>University of North Carolina at Chapel Hill B.S., Statistics and Analytics (Highest Honors and Highest Distinction) August 2014 - May 2018 Honors Thesis Adviser: Shankar Bhamidi</div><div>Chapel Hill, NC</div></div>
RESEARCH EMPLOYMENT	<div><div>Argonne National Labs, Givens Associate Supervisor: Adrian Maldonado Topic: Preconditioners for solving graph Laplacians arising from power grid networks</div><div>Chicago, Illinois May 2020 - July 2020</div></div> <div><div>Argonne National Labs, Givens Associate Supervisor: Adrian Maldonado Topic: Accelerating Newton-Raphson on GPUs using deflation methods</div><div>Chicago, Illinois May 2023 - July 2023</div></div>
PRE-PRINTS	Pritchard, N., & Patel, V. (2023). "Solving, Tracking and Stopping Streaming Linear Inverse Problems." <i>arXiv preprint arXiv:2201.05741</i> .
PUBLICATIONS	Pritchard, N., & Patel, V. (2023). Towards Practical Large-Scale Randomized Iterative Least Squares Solvers through Uncertainty Quantification. <i>SIAM/ASA Journal on Uncertainty Quantification</i> , 11(3), 10.1137/22M1515057. He, M., Glasser, J., Pritchard, N. , Bhamidi, S., & Kaza, N. (2020). Demarcating geographic regions using community detection in commuting networks with significant self-loops. <i>PloS one</i> 15(4), e0230941.
TALKS	"Large-scale randomized iterative least squares." March 2023 at SIAM CSE in Amsterdam, Netherlands.

“Towards practical large-scale least squares solvers with Iterative Right Random Sketching.” February 2023 at Argonne National Labs LANS seminar in Chicago, Illinois (Virtual).

“Residual Tracking and Stopping for Iterative Random Sketching” April 2022 at Copper Mountain Conference on Iterative Methods in Copper Mountain, Colorado (Virtual).

HONORS & AWARDS	Outstanding TA	May 2023.
	Student Research Grant Competition UW - Madison	February 2023.
	Outstanding TA (Honorable Mention)	May 2022.
SERVICE	Committee Service: TA Training Redesign (2020), Space Committee (2021), Awards and Outreach Committee (2022).	
	Statistics Graduate Student Association: Outreach Chair (Spring 2018 - Fall 2020), President (Fall 2020 - Spring 2023).	
SKILLS	Computer Languages: Julia, R, C, C++, Python	
	APIs: CUDA, MPI, OpenMP, PETSc	
SOFTWARE	RLinearAlgebra (Contributor): A Julia package for benchmarking algorithms in Randomized Linear Algebra.	
	Largistic Regression (Under Development): A Julia package that allows for the benchmarking of different logistic regression techniques.	
	LSPreconditioners (Under Development): A comprehensive Julia package of preconditioners for linear systems.	