Abby Stevens

San Francisco, CA
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Education

University of Chicago 2017 - 2022
PhD in Statistics
Advisor: Rebecca Willett
Rising Star in Data Science, 2021
David Wallace Award for Applied Statistics, 2020

Grinnell College 2010 - 2014
BA in Mathematics (with Honors)
Pamela Ferguson Endowed Prize in Mathematics, 2013

Budapest Semesters in Mathematics, Spring 2013
Semester abroad

Professional Experience

Argonne National Laboratory, *Computational Data Scientist* 2022 - Present

Doximity, *Data Scientist* 2014 - 2017

Betaworks, *Data Science Intern* Summer 2014

Publications

Fadikar, A., **Stevens, A.**, Collier, N., Toh, K., Morozova, O., Hotton, A., Clark, J., Higdon, D., and Ozik, J. (2024). Towards improved uncertainty quantification of stochastic epidemic models using sequential monte carlo. In *2024 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*, pages 843–852. IEEE

Fadikar, A., Collier, N., **Stevens, A.**, Ozik, J., Binois, M., and Toh, K. B. (2023). Trajectory-oriented optimization of stochastic epidemiological models. In *2023 Winter Simulation Conference (WSC)*, pages 1244–1255. IEEE

Collier, N., Wozniak, J. M., **Stevens, A.**, Babuji, Y., Binois, M., Fadikar, A., Würth, A., Chard, K., and Ozik, J. (2023). Developing distributed high-performance computing capabilities of an open science platform for robust epidemic analysis. In *2023 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*, pages 868–877. IEEE

Stevens, A., Ozik, J., Chard, K., Gerardin, J., and Wozniak, J. M. (2023a). NSF RESUME HPC Workshop: High-Performance Computing and Large-Scale Data Management in Service of Epidemiological Modeling. *arXiv preprint arXiv:2308.04602*

Stevens, A., Ozik, J., Chen, J., Poretsky, R., and Ramanathan, A. (2023b). NSF RESUME EcoEpi Workshop: One Health Surveillance and Predictive Intelligence for Eco-Epidemiological Modeling. *https://doi.org/10.31219/osf.io/tazm2*

Nascimento de Lima, P., **Stevens, A.**, Vardavas, R., Ozik, J., and Lempert, R. J. (2023). Co-designing capabilities for a robust pandemic. *RAND Corporation*

Gao*, Y., **Stevens*, A.**, Raskutti, G., and Willett, R. (2022). Lazy estimation of variable importance for large neural networks. In *Proceedings of the 39th International Conference on Machine Learning*, volume 162 of *Proceedings of Machine Learning Research*, pages 7122–7143. PMLR

Hotton, A. L., Ozik, J., Kaligotla, C., Collier, N., **Stevens, A.**, Khanna, A. S., MacDonell, M. M., Wang, C., LePoire, D. J., Chang, Y.-S., Martinez-Moyano, I. J., Mucenic, B., Pollack, H. A., Schneider, J. A., and Macal, C. (2022). Impact of changes in protective behaviors and out-of-household activities by age on covid-19 transmission and hospitalization in chicago, illinois. *Annals of Epidemiology*

Mucenic, B., Kaligotla, C., **Stevens, A.**, Ozik, J., Collier, N., and Macal, C. (2021). Load balancing schemes for large synthetic population-based complex simulators. In *2021 IEEE International Parallel and Distributed Processing Symposium Workshops (IPDPSW)*, pages 985–988

Stevens, A., Willett, R., Mamalakis, A., Foufoula-Georgiou, E., Randerson, J., Smyth, P., Wright, S., and Tejedor, A. (2020). Learning patterns of predictability for southwestern us precipitation using graph-guided regularized regression of pacific ocean climate variables. *Journal of Climate*, 34(2):737–754

Kaligotla, C., **Stevens, A.**, Ozik, J., Collier, N., Macal, C., Martinez-Moyano, I. J., Mucenic, B., Hotton, A., and Choe, K. W. (2020). Development of a large-scale synthetic population to simulate covid-19 transmission and response. *Proceedings of the 2020 Winter Simulation Conference*

Saleiro, P., Kuester, B., Hinkson, L., London, J., **Stevens, A.**, Anisfeld, A., Rodolfa, K. T., and Ghani, R. (2018). Aequitas: A Bias and Fairness Audit Toolkit. *eprint arXiv:1811.05577*.

Talks & Posters

"Lazy Estimation of Variable Importance for Large Neural Networks," *39th International Conference on Machine Learning*, July 2022.

"Modeling the Impact of Social Determinants of Health on COVID-19 Transmission and Mortality to Understand Health Inequities," *Rising Stars in Data Science, Center for Data and Computing, University of Chicago*, January 2021.

"Graph-guided regularized regression to improve predictive skill of precipitation at seasonal timescales," *American Geophysical Union, AGU Fall Meeting*, December 2020.

"Modeling the Impact of Social Determinants of Health on COVID-19 Transmission and Mortality to Understand Health Inequities," *Consortium for Data Scientists in Training, Michigan Institute for Data Science, University of Michigan* , October 2020.

"Graph-guided regularization for improved forecasting of Southwestern US winter precipitation," *American Geophysical Union, AGU Fall Meeting*, San Francisco, CA, December 2019. (*poster*)

"Graph-guided regularization for improved seasonal forecasting," *Workshop on Climate Informatics*, Paris, France, September 2019. (*poster*)

"Leveraging large ensemble climate simulations and graph-guided regularization for improving seasonal hydroclimatic forecasting," *Large Ensembles Workshop*, Boulder, CO, July 2019. (*poster*)

"Leveraging large ensemble climate simulations and graph-guided regularization for improving seasonal hydroclimatic forecasting," *Midwest Machine Learning Symposium*, Madison, WI, June 2019. (*poster*)

"Graph Total Variation for Seasonal Forecasting," *Computational and Applied Mathematics Student Seminar*, Chicago, IL, April 2019.

Teaching

STAT 10118 94 - Pathways in Data Science, *Instructor*	Summer 2021
STAT/CMSC 118 - Introduction to Data Science I, *Head TA*	Fall 2018-2021
STAT/CMSC 119 - Introduction to Data Science II, *Head TA*	Winter 2019-2022
STAT 234 - Statistical Models and Methods, *TA, head TA*	Winter, Spring 2018

Service

University of Chicago

· Equity, Diversity and Inclusion Student Committee	2019 - 2021
· Statistics Consulting Program	2017 - 2022
· Panelist, Discover UChicago	2019
· Panelist, FermiLab & Argonne intern summer visit	2019
· Invited speaker, Physical Sciences Division fall orientation	2019
· Department of Statistics, Student Representative	2018 - 2019
· Dean's Student Advisory Committee, Physical Sciences Division	2018 - 2019
· Center for Data Science and Public Policy, volunteer	2018

Professional

· Ambassador and organizer, Women in Data Science Chicago	2019 - Present
· Code for San Francisco, Data Science Working Group	2016-2017
· Invited speaker, Women in Mathematics Colloquium, Mills College	2015