Jiayue Wan

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY — Expected May 2024
- Ph.D. in Operations Research and Information Engineering, GPA: 4.13/4.3. Advisor: Peter I. Frazier
- Skills: Bayesian Optimization, Statistical Learning, Experimental Design, Causal Inference, Stochastic Modeling, Simulation

Stanford University, School of Engineering, Stanford, CA — June 2018
- M.S. in Management Science and Engineering, GPA: 4.07/4.3

Haverford College, Haverford, PA — May 2016
- B.S. in Mathematics and Physics, *magna cum laude*, Phi Beta Kappa, GPA: 3.96/4

PROFESSIONAL EXPERIENCE

Susquehanna International Group, Bala Cynwyd, PA — June 2023 – August 2023
Quantitative Research Intern
- Developed a mock trading signal by using mathematical and statistical tools to analyze options and equity market data
- Integrated the signal into a mock trading strategy and conducted backtesting to analyze its performance

Meta, Menlo Park, CA — May 2022 – January 2023
Research Engineering Intern, Core Data Science (Adaptive Experimentation)
- Formulated and developed stopping-aware Bayesian optimization algorithms for the BoTorch package for solving expensive-to-evaluate problems such as hyperparameter optimization (HPO) and A/B testing
- Implemented a general model-based learning curve early stopping framework in the adaptive experimentation (Ax) platform

Cornell University, Ithaca, NY — April 2020 – May 2022
Data Scientist, COVID-19 Pandemic Response
- Guided Cornell's president and provost on whether to reopen for in-person instruction and what interventions to use, achieving a daily incidence of 0.01% in the 2020-21 academic year among 34K Cornell students and employees
- Developed a Python compartmental simulation model (https://github.com/peter-i-frazier/group-testing) to forecast epidemiological outcomes in college environments, whose output influenced policies at Cornell, Stanford, Duke, University of Wisconsin - Madison, Boston University, Johns Hopkins, Yale, and several other universities
- Led retrospective parameter estimation and model calibration analysis for the 2020-21 academic year using SQL, Python and Bayesian statistics to support improvements to Cornell's asymptomatic screening program
- Led analysis of the risk of infection during travel to support travel policy decisions and communication with stakeholders by performing causal inference on data from 18K students
  Reports of all analyses are published online at https://covid.cornell.edu/testing/modeling/.
  Media coverage by ABC News, Wall Street Journal, Forbes, Asahi Shimbun.

RESEARCH EXPERIENCE

COVID-19 Mathematical Modeling
- Formulated a general theoretical framework for correlation in pooled testing to investigate its effect on sensitivity and efficiency and refine the scientific community's understanding of its ability to control epidemics
- Led analysis of vaccine effectiveness in response to queries from the CDC and NYC Health Department using Python and SQL

Grey-Box Bayesian Optimization
- Designed and implemented novel grey-box Bayesian optimization algorithms where additional sources of information besides the final objective are available

SELECTED PUBLICATIONS & WORKING PAPERS

Frazier et al., Modeling for COVID-19 College Reopening Decisions: Cornell, A Case Study. *Proceedings of the National Academy of Sciences*, 19(2) e2112532119 (2022).
Wan et al., Booster vaccination protection against SARS-CoV-2 infections in young adults during an Omicron BA.1-predominant period: a retrospective cohort study. *PLOS Medicine,* 20(1):e1004153 (2023).
J. Wan, Y. Zhang, P.I. Frazier, Correlation Improves Group Testing. Major revision at *Management Science*.

LEADERSHIP & SKILLS

Co-President, Cornell University Operations Research Graduate Students' Association (ORGA) — 2020 - 2021
Programming: Python (PyTorch, NumPy, SciPy, Scikit-Learn, Pandas), R, SQL, MATLAB, Julia
Languages: English, Mandarin Chinese, Shanghainese