

## EDUCATION

<b>Cornell University, College of Engineering</b> , Ithaca, NY	Expected 2024
<ul style="list-style-type: none"> <li>Ph.D. in Operations Research and Information Engineering, GPA: 4.13/4.3. Advisor: Peter I. Frazier</li> <li>Skills: Machine Learning, Bayesian Optimization, Experimental Design, Causal Inference, Stochastic Modeling, Simulation</li> </ul>	
<b>Stanford University, School of Engineering</b> , Stanford, CA	June 2018
<ul style="list-style-type: none"> <li>M.S. in Management Science and Engineering, GPA: 4.07/4.3</li> </ul>	
<b>Haverford College</b> , Haverford, PA	May 2016
<ul style="list-style-type: none"> <li>B.S. in Mathematics and Physics, <i>magna cum laude</i>, Phi Beta Kappa, GPA: 3.96/4</li> </ul>	

## PROFESSIONAL EXPERIENCE

<b>Meta</b> , Menlo Park, CA	May 2022 – present
<i>Research Engineering Intern, Core Data Science (Adaptive Experimentation)</i>	
<ul style="list-style-type: none"> <li>Formulated and developed stopping-aware Bayesian optimization algorithms for the BoTorch package for solving expensive-to-evaluate problems such as hyperparameter optimization (HPO) and AutoML</li> <li>Implemented a general model-based learning curve early stopping framework in the adaptive experimentation (Ax) platform</li> </ul>	
<b>Cornell University</b> , Ithaca, NY	April 2020 – May 2022
<i>Data Scientist, COVID-19 Pandemic Response</i>	
<ul style="list-style-type: none"> <li>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</li> <li>Developed a Python compartmental simulation model (<a href="https://github.com/peter-i-frazier/group-testing">https://github.com/peter-i-frazier/group-testing</a>) to predict 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</li> <li>Led retrospective parameter estimation and model calibration analysis for the 2020-21 academic year using SQL, Python and Bayesian machine learning to support improvements to Cornell's asymptomatic screening program</li> <li>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</li> </ul>	
<i>Reports of all analyses are published online at <a href="https://covid.cornell.edu/testing/modeling/">https://covid.cornell.edu/testing/modeling/</a>.</i>	
<i>Media coverage by ABC News, Wall Street Journal, Forbes, Asahi Shimbun.</i>	
<b>Cardinal Operations</b> , Shanghai, China	June 2017 – September 2017
<i>Algorithm Engineer Intern</i>	
<ul style="list-style-type: none"> <li>Led a consulting engagement with Budweiser, designing and implementing operations research software for managing warehouse operations in Python and CPLEX</li> <li>Designed and implemented clustering and vehicle routing algorithms in Python and delivered business region partition, facility location and route planning solutions for SF Express, a large courier company</li> </ul>	

## RESEARCH EXPERIENCE

<b>Bayesian Optimization with Applications in Materials Design</b>	
<ul style="list-style-type: none"> <li>Designed and implemented novel Bayesian optimization algorithms in settings of importance by drug discovery and materials design where additional sources of information besides the final objective are available</li> <li>Developed efficient sequential experimental design algorithms, using Bayesian machine learning for materials discovery, focused on preventing ice growth on airplane wings, in collaboration with experts in molecular simulation and biochemistry</li> </ul>	
<b>COVID-19 Mathematical Modeling</b>	
<ul style="list-style-type: none"> <li>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</li> <li>Led analysis of vaccine effectiveness in response to queries from the CDC and NYC Health Department using Python and SQL</li> </ul>	

## SELECTED PUBLICATIONS & WORKING PAPERS

Frazier et al., Modeling for COVID-19 College Reopening Decisions: Cornell, A Case Study. <i>Proceedings of the National Academy of Sciences</i> , 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. To appear in <i>PLOS Medicine</i> .	
J. Wan, Y. Zhang, P.I. Frazier, Correlation Improves Group Testing. Major revision at <i>Management Science</i> .	

## LEADERSHIP & SKILLS

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