Kyra (Jingyi) Gan **Last update: Feb 12, 2023**

CONTACT

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EMPLOYMENT

Assistant Professor, **Cornell Tech**, ORIE, NYC, NY 2023-

Postdoctoral Fellow, **Harvard University**, Statistics, Cambridge, MA 2022-2023

- Under the supervision of Susan A. Murphy

EDUCATION

Carnegie Mellon University, Tepper School of Business, Pittsburgh, PA 2017–2022

- Ph.D. in Operations Research (Minor in Machine Learning)
- Thesis: *Modern Methods in Precision Medicine*
- Committee: Sridhar Tayur (Co-chair), Andrew A. Li (Co-chair), Zachary Lipton, Alan Scheller-Wolf, Tinglong Dai

Smith College, Northampton, MA. 2014–2017

- B.A.s, Mathematics, Economics
- Honors: Dean's List 2014 – 2017, Elected Sigma Xi 2017, Ann Kirsten Pokora Prize (excellence in mathematics)

University of California, San Diego, La Jolla, CA. 2013–2014

- Honors: Provost Honors 2013—2014

AWARDS

- Finalist, 2023 INFORMS DMDA Workshop Best Paper Competition – Theoretical Track
- Winner, 2021 INFORMS Pierskalla Best Paper Award
- Winner, 2021 CHOW Best Student Paper in the Category of Operations Research and Management Science
- Finalist, 2019 INFORMS IBM Service Science Best Student Paper Award
- Tata Consultancy Services Fellowship, 2020
- William Larimer Mellon PhD Fellowship, 2017-2019, 2021, 2022

PREPRINTS

- **Peeking with PEAK: Sequential, Nonparametric Composite Hypothesis Tests for Means of Multiple Data Streams** with Brian Cho and Nathan Kallus
  Under review in ICML 2024
- **Online Uniform Risk Times Sampling: First Approximation Algorithms, Learning Augmentation with Full Confidence Interval Integration** with Xueqing Liu, Esmaeil Keyvanshokooh, and Susan A. Murphy
  Under review in ICML 2024
- **Local Causal Discovery by Partitioning: Polynomial-Time Causal Discovery around Exposure-Outcome Pairs**
  Under review in UAI 2024
  Jacqueline Maasch, Weishen Pan, Shantanu Gupta, Volodymyr Kuleshov, Kyra Gan, and Fei Wang
  A preliminary version is accepted at Causal Representation Learning Workshop at Neurips 2023
- **Kernel Debiased Plug-in Estimation: Simultaneous, Automated Debiasing without Influence Functions for Many Target Parameters**
  Under review in ICML 2024
  Brian Cho*, Yaroslav Mukhin*, Kyra Gan, and Ivana Malenica

Refereed Conference Proceedings

- **Anytime-valid inference in N-of-1 trials**
  Accepted at Machine Learning for Health (ML4H) symposium 2023
  Ivana Malenica, Yongyi Guo, Kyra Gan, Stefan Konigorski

- **Contextual Bandits with Budgeted Information Reveal.**
  Accepted at AISTATS 2024
  Kyra Gan, Esmaeil Keyvanshokooh, Xueqing Liu, and Susan A. Murphy

- **Greedy Approximation Algorithms for Active Sequential Hypothesis Testing.**
  NeurIPS 2021
  Kyra Gan*, Su Jia*, and Andrew Li

- **Causal Inference with Selectively Deconfounded Data.**
  AISTATS 2021
  Kyra Gan, Andrew Li, Zachary Lipton, and Sridhar Tayur

- **Machine Learning Algorithms for Predicting Hospital Readmissions in Sickle Cell Disease.**
  ASH Annual Conference 2019
  Arisha Patel*, Kyra Gan*, Andrew A. Li, Jeremy Weiss, Seyed Mehdi Nouraie, Sridhar Tayur, and Enrico M Novelli.

- **Data Visualization of Agent-Based Modeling of Virus Spread.**
  INFOCOMP 2017
  Jingyi Gan and Dominique Thiébaut.

Journal Papers

- **Toward a Liquid Biopsy: Greedy Approximation Algorithms for Active Sequential Hypothesis Testing.**
  Major revision in *Management Science*
  Winner, 2021 INFORMS Pierskalla Best Paper Award
  Kyra Gan*, Su Jia*, Andrew Li, and Sridhar Tayur

- **Causal Inference with Selectively Deconfounded Data.**
  Management Science 2nd round: major revision
  Kyra Gan, Andrew Li, Zachary Lipton, and Sridhar Tayur.

- **Personalized Treatment for Opioid Use Disorder.**
  2021 CHOW Best Paper in the Category of Operations Research and Management Science
  Finalist, 2019 IBM Service Science Best Student Paper Award
  Kyra Gan, Alan Scheller-Wolf, and Sridhar Tayur.

- **Machine Learning Algorithms for Predicting Hospital Readmissions in Sickle Cell Disease.**
  British Journal of Haematology 2020
  Arisha Patel*, Kyra Gan*, Andrew A. Li, Jeremy Weiss, Seyed Mehdi Nouraie, Sridhar Tayur, and Enrico M Novelli.

- **Awarding Additional MELD Points to the Shortest Waitlist Candidates Improves Sex Disparity in Access to Liver Transplant in the United States.**
  American Journal of Transplant 2022
  Sarah Bernards, Eric Lee, Ngai Leung, Mustafa Akan, Kyra Gan, Huan Zhao, Monika Sarkar, Sridhar Tayur, Neil Mehta

Selected Talks

- Information Theory and Applications Workshop, *Online Uniform Risk Times Sampling*, San Diego, Feb 2024
- Cornell Center for Applied Mathematics Colloquium, *Kernel Debiased Plug-in Estimation*, Ithaca, Feb 2024
- Workshop on Quantifying Uncertainty: Stochastic, Adversarial, and Beyond, Simons Institute for the Theory of Computing, *Greedy Approximation Algorithms for Active Sequential Hypothesis Testing*, September 2022
- Harvard Statistics Colloquium, *Greedy Approximation Algorithms for Active Sequential Hypothesis Testing*, October 2022

- IMSI workshop on Machine Learning and Artificial Intelligence for Personalized Medicine, *Contextual Bandits with Budgeted Information Reveal*, April 2023

Poster Presentations

- **Toward a Liquid Biopsy: Greedy Approximation Algorithms for Active Sequential Hypothesis Testing**
  Cornell Young Researchers Workshop 2021, Ithaca, NY, October 7-9
- **Causal Inference with Selectively Deconfounded Data**
  AISTATS 2021,Virtual, April
  NeurIPS 2019 Causal ML Workshop, Vancouver, BC, Canada, December
- **Greedy Approximation Algorithms for Active Sequential Hypothesis Testing**
  NeurIPS 2021, Virtual
  mDOT Annual Conference, November 2022, Memphis, TN
- **Machine Learning Algorithms for Predicting Hospital Readmissions in Sickle Cell Disease**
  American Society of Hematology Annual Conference 2019, Orlando, FL, December
- **Data Visualization of Agent-Based Modeling of Virus Spread**
  National Conference on Undergraduate Research, 2017

Teaching at Cornell Tech

- **ORIE 7790: Selected topics in Applied Statistics – Statistical and Optimization Methods for Decision-Making in Healthcare** Spring 2024
- **CS 5785/ORIE 5750/ECE 5414, Applied Machine Learning** Fall 2023

Previous Teaching

- **Undergraduate Mathematical Modeling for Consulting, Instructor** Jan - May 2021
  Rating: 4.33/5.0
  Developed the course material in Jupyter Notebook and Gurobipy
  Lectures consisted of business applications and live coding demos
  Students were evaluated on ten homeworks, two exams and one group project

- **As Teaching Assistant at CMU**
  - **Machine Learning for Business Analytics** (Undergraduate), Aug - Dec 2020
    with Prof. Andrew Li and Prof. Benjamin Moseley
    Help develop the course materials including slides, homework, and exams in R
    Held office hours and graded homework and exams
  - **Machine Learning for Business Analytics** (Undergraduate), Aug - Dec 2021
    with Prof. Andrew Li; graded and held office hours
  - **Machine Learning for Business Applications** (MSBA), March - June 2019, 2020, 2021
    with Prof. Zachary Lipton; developed and graded homework and exams
  - **Machine Learning for Business** (MBA), June - July 2020
    with Prof. Zachary Lipton; developed and graded homework and exams
  - **Programming in R and Python** (MSBA), Oct - Dec 2019, 2020
    with Prof. Zachary Lipton; developed and graded homework and exams
  - **Financial Optimization** (MSCF), Aug - Oct 2019, 2020
    with Prof. Javier Peña; graded and proofread Chinese translation of the textbook
  - **Six Sigma Tools and Techniques** (MBA), Oct - Dec 2019, 2020
    with Prof. Alan Scheller-Wolf; grader
  - **Advanced Stochastic Analysis and Applications** (Ph.D.), Aug - Dec 2019
    with Prof. Mor Harchol-Balter; graded, held office hours, and led recitations
  - **Business, Society & Ethics** (Undergraduate), Jan - May 2019, 2020
    with Prof. Joseph Hornack; grader
  - **Business Law** (Undergraduate), Jan - May 2020
    with Prof. Joseph Hornack; grader

- **As Teaching Assistant in Smith College**
  - **Number Theory, Calculus I, Abstract Algebra, Introduction to Probability**

Community Service

- Co-chairing 2022 INFORMS Pierskalla Award Competition