ISAAC GIBBS

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EDUCATION

Ph.D. in Statistics, Stanford University 2019 - Present
Advisor: Emmanuel Candès

B.Sc. in Math and Computer Science, McGill University. 2015-2019
Graduated with first class honours.

PUBLICATIONS AND PREPRINTS

Gibbs, I., Cherian, J., and Candès, E. (2023+). Conformal Prediction With Conditional Guarantees. *arXiv preprint.* `https://arxiv.org/abs/2305.12616`

Gibbs, I. and Candès, E. (2022+). Conformal Inference for Online Prediction with Arbitrary Distribution Shifts. *arXiv preprint.* `https://arxiv.org/abs/2208.08401`

Gibbs, I. and Candès, E. (2021). Adaptive Conformal Inference Under Distribution Shift. *Advances in Neural Information Processing Systems 34* (oral presentation). `https://arxiv.org/abs/2106.00170`

Gibbs, I. and Chen, L. (2020). Asymptotic properties of random Voronoi cells with arbitrary underlying density. *Advances in Applied Probability*, 52(2), 655-680.

Gibbs I., Leavey K., Benton S.J., Grynspan D., Bainbridge S.A., and Cox B.J. (2019). Placental transcriptional and histologic subtypes of normotensive fetal growth restriction are comparable to preeclampsia. *American Journal of Obstetrics and Gynecology,* 220(1):110.e1-110.e21.

RESEARCH EXPERIENCE

Graduate Student Researcher, Stanford University. 2019 - Present
Advisor: Emmanuel Candès.
Development of methods for quantifying the uncertainty of predictions made by black-box models.

Undergraduate Student Researcher, McGill University. Summer 2019
Advisors: Prakash Panangaden and Doina Precup.
Compared the empirical performance of distributional and expected deep reinforcement learning algorithms.

Undergraduate Student Researcher, McGill University. Summer 2018
Advisor: Linan Chen.
Investigated the geometric properties of Voronoi diagrams generated by i.i.d. samples from an unknown density.

Honours Research Project, McGill University. Spring 2018
Advisor: Doina Precup.
Project in reinforcement learning. Derived theoretical guarantees for learning a policy over options from an imperfect simulator of the environment.

Undergraduate Student Researcher, University of Toronto. Summer 2016, Summer 2017
Advisor: Brian Cox.
Used unsupervised learning methods to identify and characterize subtypes of fetal growth restriction.

PRESENTATIONS

Contributed Presentations

- Advances in Neural Information Processing Systems 34. December 9, 2021
  Talk - Adaptive Conformal Inference Under Distribution Shift.
- International Federation of Placenta Associations meeting. September 1, 2017
  Talk - Placental subtypes of fetal growth restriction.

Conference Posters

- ICML 2021 Workshop on Distribution-Free Uncertainty Quantification. July 24, 2021
  Talk - Adaptive Conformal Inference Under Distribution Shift.

TEACHING

As the Principal Instructor

- STATS302: Applied Statistics Qualifying Exam Workshop. Summer 2021

As a Teaching Assistant

- DATASCI120: Data Narratives. Spring 2023
- STATS217: Introduction to Stochastic Processes I. Winter 2023
- STATS300A: Theory of Statistics I. Fall 2022
- STATS203: Introduction to Regression Models and Analysis of Variance. Spring 2022
- STATS191: Introduction to Applied Statistics. Winter 2022
- STATS200: Introduction to Statistical Inference. Fall 2021
- STATS305b: Applied Statistics II. Winter 2021
- STATS200: Introduction to Statistical Inference. Fall 2020
- STATS203: Introduction to Regression Models and Analysis of Variance. Summer 2020
- STATS290: Computing For Data Science. Winter 2020
- STATS202: Data Mining and Analysis. Fall 2019

AWARDS

Stanford Statistics Departmental Teaching Assistant Award. 2023
Received for outstanding contributions as a teaching assistant during PhD at Stanford.

Dr. Feng Qian Convocation Prize. 2019
Awarded to top graduating students in computer science at McGill University.

NSERC Undergraduate Student Research Award. 2018, 2019
Received separately in 2018 and 2019 at McGill University.

Sir Edward Beatty Memorial Scholarship and Emily Ross Crawford Scholarship. 2018
For academic performance in B.Sc. at McGill University.