

Sean O'Hagan

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EDUCATION

• University of Chicago

PhD Candidate in Statistics

Chicago, IL

Sept. 2021 – June 2026 (expected)

Advised by Veronika Ročková (Chicago Booth). Supported by a McCormick Fellowship.

Research Interests: Uncertainty quantification, Bayesian methodology and computation, natural language processing, Bayesian optimization & adaptive experimentation, intersections between statistics and AI/LLMs

• University of Connecticut

Bachelor of Science, Honors, Mathematics, summa cum laude

Storrs, CT

Aug. 2017 – May 2021

Bachelor of Science, Honors, Statistics, summa cum laude

Honors & Awards: Academic Excellence Scholarship, Stuart Sidney Calculus Competition Award, Putnam Competition Award, Babbidge Scholar, Phi Beta Kappa, Sigma Pi Sigma. **GPA:** 3.98/4.0

SUBMITTED RESEARCH

- Marcelli, M., **O'Hagan, S.**, and Ročková, V., “Generative Bayesian Filtering and Parameter Learning”. arXiv:2511.04552. November 2025. *Recognized by the 2025 Arnold Zellner Doctoral Prize*.
- **O'Hagan, S.** and Ročková, V., “Generative Regression with IQ-BART”. arXiv:2507.04168. July 2025. *Major revision submitted (11/2025) to Journal of the American Statistical Association*.
- **O'Hagan, S.** and Ročková, V., “AI-Powered Bayesian Inference”. arXiv:2502.19231. February 2025. *Under review at Harvard Data Science Review*.
- **O'Hagan, S.***, Kim, J.*, and Ročková, V., “Adaptive Uncertainty Quantification for Generative AI”. arXiv:2408.08990. August 2024. *Under review at Journal of Machine Learning Research*.
- **O'Hagan, S.**, Kim, J., and Ročková, V., “Tree Bandits for Generative Bayes”. arXiv:2404.10436. April 2024. *Minor revision submitted (11/2025) to Journal of the American Statistical Association*.
- **O'Hagan, S.** and Schein, A., “Measurement in the Age of LLMs: An Application to Ideological Scaling”. arXiv:2313.09203. Nov. 2023. *Revision in progress for Harvard Data Science Review*.

IN MEDIA

- Brown, M., “With an AI sidekick, models are smarter sleuths”. *Chicago Booth Review*, October 2025. [Features research: **O'Hagan, S.** and Ročková, V., “AI-Powered Bayesian Inference”]
- Brown, M., “Is ChatGPT confident about its answer or just bluffing?”. *Chicago Booth Review*, April 2025. [Features research: **O'Hagan, S.***, Kim, J.*, and Ročková, V., “Adaptive Uncertainty Quantification for Generative AI”]

EXPERIENCE

• University of Chicago

Statistical Consultant

Chicago, IL

Sept. 2022 – Present

- Collaborate with a team of PhD students to assist university faculty, postdoctoral researchers, and graduate students with experimental design, data analysis, statistical inference, and computation
- **Senior Consultant Award** (×2): Awarded for outstanding performance as an individual consultant in the 2022–2023 year, and again in the 2023–2024 year
- **Consulting Team Award** (×2): Awarded for the best consulting team performance (winter 2023, spring 2024)

• ICERM at Brown University

Undergraduate Research Intern

Providence, RI

June 2020 – Aug. 2020

- Developed novel algorithms for efficiently constructing deterministic and randomized interpolative decompositions, and for efficient hyperparameter optimization in kernel methods using random Fourier features

TECHNICAL SKILLS

- **Programming:** Python (`torch`, `jax`), C++, R, JavaScript, HTML/CSS
- **Development Tooling:** GNU/Linux, Git, HPC, CI/CD

PRESENTATIONS

- “Generative Regression with IQ-BART”. Booth School of Business Econometrics and Statistics Student Seminar. Chicago, IL. October 2025.
- “Tree Bandits for Generative Bayes”. 14th International Conference on Bayesian Nonparametrics. Los Angeles, CA. June 2025. *Contributed talk*. Supported by NSF travel award.
- “Representations of Ideology in Large Language Models”. 10th International Conference on Computational Social Science (IC2S2). Philadelphia, PA. July 2024. *Contributed talk*.
- “Reinforcement Learning for Approximate Bayesian Computation via Tree-Based Recursive Partitioning”. UChicago CAM & Stats Student Seminar. Chicago, IL. February 2024.
- “Measurement in the Age of LLMs: An Application to Ideological Scaling”. New Directions in Analyzing Text as Data (TADA). Amherst, MA. November 2023. *Poster*.
- “An Improved Interpolative Decomposition”. SUMS Conference. Harrisonberg, VA. Dec. 2020. *Contributed talk*.

TEACHING

- **University of Chicago** Chicago, IL
Teaching Assistant Jan. 2022 – Present
 - **Courses:** Modern Methods of Applied Statistics (PhD), Generalized Linear Models (PhD), Applied Linear Statistical Methods (PhD), Statistical Methods and Applications, Elementary Statistics
 - **Pathways in Data Science:** Guided lab sessions for high-school students on python programming and basic statistics/machine learning during a three-week introductory summer course
- **University of Connecticut** Storrs, CT
Undergraduate Teaching Assistant Sept. 2019 – May 2021
 - **Courses:** Numerical Analysis, Stochastic Processes, Complex Variables, Transition to Advanced Mathematics

SERVICE

- **Journal Reviewing:** Journal of the Royal Statistical Society: Series B (JRSSB) (2024, 2025), Journal of the American Statistical Association (JASA) (2025), Biometrika (2025), Bayesian Analysis (2025)
- **Conference Reviewing:** NeurIPS (2024)