

Adway S. Wadekar

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EDUCATION

2021–25 B.S. in Mathematics and Statistical Science, Duke University.

Minor in Economics.

Graduate-level coursework: Coalescent Theory (planned), Stochastic Models (planned), Bayesian Statistics (planned), Bayesian Non-parametric Models (planned), High-dimensional Probability, Real Analysis, Algebraic Structures, Numerical Analysis, Probabilistic Machine Learning, Statistical Genetics.

RESEARCH INTERESTS

Biostatistics & bioinformatics, statistical & population genetics, multi-omics data.

Survey statistics, differential privacy, missing data and synthetic data.

High-dimensional probability, random graphs, metric geometry, concentration of measure, and applications.

Applications of statistics to the social sciences, including political polarization and social epidemiology.

RESEARCH EXPERIENCE

2024– Research Assistant, Department of Biomedical Informatics, Harvard Medical School

Advisor: Prof. Chirag Patel

Developed methods to translate estimators for polygenic risk scores to exposomic and proteomic data. Funded through the Harvard Summer Institute in Biomedical Informatics.

2024– Research Assistant, Department of Mathematics, Duke University

Advisor: Prof. Nicholas Cook

Studying random geometric graphs in hyperbolic space. Funded through the mathematics department's PRUV Fellowship.

2024– Research Assistant, Department of Biostatistics and Bioinformatics, Duke University

Advisor: Prof. Jichun Xie

Applying and developing statistical knockoff methodology for genome-wide association studies to detect common causal variants of lung diseases.

2022– Research Assistant, Department of Statistical Science, Duke University

Advisor: Prof. Jerry Reiter

Developed a technique to incorporate complex survey design into estimates of population-level accuracy for machine learning classifiers trained and evaluated on survey data. Summer 2022 research funded by a Duke Huang Fellowship. Currently studying Bayesian prediction intervals for differentially-private verification of parameters.

PUBLICATIONS

- 2024 A.S. Wadekar and J.P. Reiter. “Estimating Binary Outcome Classifiers Using Survey Data,” *Epidemiology* (forthcoming). arXiv: [2311.00596](https://arxiv.org/abs/2311.00596)
- 2020 A.S. Wadekar. “A Psychosocial Approach to Predicting Substance Use Disorder (SUD) Among Adolescents.” In *Proceedings of IEEE/ACM Intl. Conference on Social Networks Analysis and Mining*, 819-826. doi: [10.1109/ASONAM49781.2020.9381378](https://doi.org/10.1109/ASONAM49781.2020.9381378)
- 2020 A.S. Wadekar. “Understanding Opioid Use Disorder Using Tree-based Classifiers.” *Drug and Alcohol Dependence*, 208, 107839. doi:[10.1016/j.drugalcdep.2020.107839](https://doi.org/10.1016/j.drugalcdep.2020.107839)

PRESENTATIONS

- May 2023 “Truth or consequences? A principled path to evaluating classifiers using survey data,” Symposium on Data Science and Statistics, St. Louis, Missouri.
- Jan. 2023 “Using weights to improve the reliability of classification metrics with complex survey data,” Dept. of Statistical Science, Duke University.
- July 2019 “Predicting Opioid Use Disorder Using a Random Forest,” IEEE 43rd Computer Software and Applications Conference, Milwaukee, Wisconsin.
- Mar. 2018 “Grade-level Participation in the Advanced Placement Curriculum,” IEEE Integrated STEM Education Conference, Princeton, New Jersey.

AWARDS, HONORS, AND RESEARCH SUPPORT

- 2024 Semifinalist (7 semifinalists, 3 awardees out of 1700+ undergraduates) for [Faculty Scholars Award](#), Duke University.
- 2024 Program for Research for Undergraduates (PRUV) Fellowship, Dept. of Mathematics, Duke University (\$3,500).
- 2023, 2024 Deans’ Summer Research Fellowship, Duke University (declined, \$3000).
- 2023 Finalist submission for [Fischer-Zernin Award for Local Journalism](#), Duke University.
- 2023 Finalist submission for [Melcher Award for Excellence in Student Journalism](#), Duke University.
- 2023 Conference Grant, Office of Undergraduate Research Support, Duke University (\$500).
- 2022 Huang Research Fellowship, Initiative for Science and Society, Duke University (\$6,000).
- 2021 Scholar Award, Regeneron Science Talent Search.
- 2019 Certificate of Honorable Mention (administered by the American Statistical Association), Intel International Science and Engineering Fair.

TEACHING EXPERIENCE

- 2024 Undergraduate teaching assistant, Dept. of Statistical Science, Duke University.
- 2021– Undergraduate teaching assistant for DECISION 618 (Data Analytics for Business), Fuqua School of Business, Duke University.
- 2022 Help room teaching assistant for introductory calculus classes, Dept. of Mathematics, Duke University.

2022– Grader for MATH 230 (Probability) and MATH 122 (Introductory Calculus II), Dept. of Mathematics, Duke University.

SERVICE

Academic Journal Referee

Journal of the American Medical Informatics Association, Drug and Alcohol Dependence.

Service to the University

Trinity Ambassador for the Department of Statistical Science, Duke University.

Student application reviewer for Huang Fellows Program, Initiative for Science and Society, Duke University.

Blue Devil Buddies peer mentor, Duke University.

OTHER EMPLOYMENT

2021– Creative Intern, Duke Men’s Basketball.

2021–24 News Editor (2023-24), University News Editor (2022-23) and Staff Reporter (2021-22), Duke Chronicle.

2019–20 Photographer-in-Residence, Town of Westborough, Massachusetts.

Updated August 2024