Adway S. Wadekar

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EDUCATION

2021–25   Bachelor of Science in Mathematics and Statistical Science, Duke University.

Minor in Economics.

Graduate-level coursework: Algebraic Topology (in-progress), Bayesian Statistics (in-progress), Time Series and Dynamic Models (in-progress), High-dimensional Probability, Real Analysis, Algebraic Structures, Numerical Analysis, Probabilistic Machine Learning, Quant. Meth. for Biomedical Data.

RESEARCH INTERESTS

Biostatistics & bioinformatics, genetic epidemiology, genome-wide association, whole-genome sequencing.

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

Survey statistics, missing data, record linkage, synthetic data generation and differential privacy.

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

RESEARCH EXPERIENCE

2024–   Research Assistant, Department of Mathematics, Duke University
Advisor: Prof. Nicholas Cook

Studied properties of random simplicial complexes towards detecting geometric structure. Funded through the mathematics department's PRUV Fellowship.

2024–   Research Assistant, Department of Biostatistics and Bioinformatics, Duke University
Advisor: Prof. Jichun Xie

Applied statistical knockoff methodology on whole-genome sequencing data to understand rare and common variants associated with idiopathic pulmonary fiibrosis.

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 classifiiers trained and evaluated on survey data. Summer 2022 research funded by a Duke Huang Fellowship.

PUBLICATIONS

2024   A.S. Wadekar and J.P. Reiter. "Estimating Binary Outcome Classifiers Using Survey Data" revise and resubmit at *Epidemiology*. arXiv: 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

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

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	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

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

Blue Devil Buddies peer mentor, Duke University.

PROFESSIONAL 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 May 2024