Anna Neufeld

Contact Information

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Education

University of Washington, Seattle, Washington. 2018-Present
Statistics PhD Student, GPA 3.84

- Advisor: Daniela Witten
- Selected coursework: advanced theory of statistical inference, advanced regression methods, measure theory, statistical machine learning, statistical demography, causal inference, spatial statistics, statistical analysis of networks

Williams College, Williamstown, MA 2014-2018
BA in Mathematics (Highest Honors) and Computer Science.
Summa Cum Laude, GPA 4.04.

- Selected coursework: natural language processing, machine learning, artificial intelligence, theory of computation, algorithms, computer organization, programming languages, probability, regression and forecasting, real analysis, abstract algebra, dynamics of infectious disease, price and allocation theory, income distribution

Research Experience

Research Assistant (University of Washington) 2020-Present
Inference for Regression Trees

- Working with Daniela Witten on post selection inference for CART regression trees.

Williams College Undergraduate Honors Thesis 2017-2018
Longitudinal Regression Trees for Clustering Body Mass Index Trajectories

- Worked with Professor Brianna Heggeseth. Implemented, compared, and modified existing longitudinal regression tree methods. Ran simulation studies to understand behavior of previous methods.
- Developed the R package splinetree, available on github and CRAN.

SMALL Research Experience for Undergraduates Summer 2016
Zika Virus Dynamics: When does Sexual Transmission Matter?

- Conducted research in mathematical ecology under Professor Julie Blackwood and Professor Lauren Childs.
- Used ordinary differential equations to explore the relative contributions of sexual transmission and vector transmission in the spread of the Zika virus; work published in *Epidemics*.

Teaching Experience

Instructor Summer 2019
University of Washington Department of Statistics

- Full responsibility for the course Stat 311, Elements of Statistical Methods, for summer quarter 2019. There were 61 students in the class.

Head Teaching Assistant Autumn 2019, Winter 2020
University of Washington Department of Statistics

- Developed lab assignments for Stat 311, maintained lab website, helped write assignments and exams, served as liaison between Professor and other TAs.
- Led lab sections for two sections of 34 undergraduates each. Developed lab materials for a total of 195 students.

Teaching Assistant Autumn 2018
University of Washington Department of Statistics
- Teaching assistant for Stat 311- Elements of Statistical Methods, Stat 423- Applied Regression, and CSE/Stat 416- Introduction to Machine Learning.
- Responsible for lab sections of around 30 undergraduates each. The purpose of the lab was to reinforce concepts from lecture. Also held office hours and graded assignments.

Teaching Assistant September 2015 - May 2018
Williams College Departments of Computer Science, Mathematics, and Statistics
- Teaching assistant for Data Structures (F15), Linear Algebra (S16, S17), Abstract Algebra (F16), Regression and Forecasting (F17, S18)
- Duties included grading homework and holding evening help sessions.

Workshop Leader January 2018
Williams College Office of Academic Resources
- Worked with a group of undergraduates and the Office of Academic Resources to pilot a new program of coding workshops over our January Term
- Taught a series of workshops in R to undergraduates from a variety of departments and graduate students from the Center for Development Economics.

Peer Tutor 2016-2018
Williams College Office of Academic Resources
- Nominated by faculty to serve as a peer tutor. Held one-on-one and drop-in tutoring sessions for microeconomics, macroeconomics, calculus, linear algebra, real analysis, statistics, and computer science.
- Also worked one on one with biology research students who needed help conducting data analysis in R.

Publications

Maxian, O., **Neufeld, A.**, Talis, E. J., Childs, L. M., & Blackwood, J. C. (2017). Zika virus dynamics: When does sexual transmission matter?. Epidemics, 21, 48-55.

Software

splinetree: longitudinal trees and forests using a spline projection method R package. Available from github and CRAN.

Professional Experience

Cogo Labs, Cambridge, MA June 2017-August 2017
Data Analytics Intern
- Worked with a team of engineers, designers, and analysts to build and market a website. Analyzed market data with SQL, analyzed site performance with google analytics and piwik, and assisted with backend web development in python.

Honors and Awards

Williams College
- The Erastus C. Benedict First Prize in Mathematics, presented to outstanding sophomore, 2016
- Phi Beta Kappa, Junior Year Inductee, 2017

- Sigma Xi Scientific Honors Society, 2018
- Robert M. Kusilka Prize in Statistics, presented to outstanding senior, 2018
- W. Margaret Canby Award Athletic Scholarship Prize, for highest standing in scholarship among senior varsity athletes, 2018
- New England Small Colleges Athletic Conference (NESCAC) All Sportsmanship selection (One person per team, 2017) and All Academic selection (2016-2018)
- Clare Booth Luce Scholar, 2016-2018

Mentoring

Statistics and Probability Association Directed Reading Program (SPA-DRP)

- Co-founded (in 2020) a program that pairs undergraduates with PhD student mentors for independent studies. Modeled after successful Directed Reading Programs (DRPs) in mathematics departments at several universities. More information can be found at `spa-drp.github.io`.
- Served as a graduate student coordinator for 2020-2021.
- Mentored an undergraduate student in Statistical Natural Language Processing during Winter 2020.
- Mentored an undergraduate student in Modeling Infectious Diseases during Spring 2020.

Service

- Reviewer for Statistical Science.
- UW Statistics Graduate Student Representative (2020-2021).
- Read applications for PhD Admissions (2020)
- UW Statistics Diversity, Inclusion, Community, and Equity (DICE) Committee (2019-2020)
- Chair of the UW Statistics Fun Committee, 2019-2020
- Organizer and Founder: Statistics Education Reading Group, Autumn 2019-Winter 2020

Skills

- Proficient: R, Python, Java, C, C++, matlab, Mathematica
- Familiar: SQL, html, javascript, CSS