Andrew Sage

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EDUCATION

Iowa State University, Ames, Iowa
Degree: Ph.D. in Statistics 2018
Dissertation Title: *Random forest robustness, variable importance and tree aggregation*
Advisors: Ulrike Genschel, Dan Nettleton

Iowa State University, Ames, Iowa
Degree: M.S. in Statistics 2015
Master's Project: *Predicting student retention in STEM: A random forest based approach*
Advisor: Dan Nettleton

Miami University, Oxford, Ohio
Degree: M.S. in Mathematics 2013
Master's Project: *Calculation of cell bounds for contingency tables from rounded conditional frequencies*
Advisor: Stephen Wright

The College of Wooster, Wooster, Ohio,
Degree: B.A. in Mathematics 2007
Summa Cum Laude

TEACHING/MENTORING EXPERIENCE

Iowa State University, Ames, Iowa
Graduate teaching assistant, Department of Statistics
Courses taught as instructor:

- Stat 231: probability and statistics for engineering (3 times) 2017-18
- Stat 330: probability and statistics for computer science F2016
- Stat 104: introductory statistics F2014

Other teaching/mentoring at Iowa State University

- Graduate mentor for Freshman Honors Project by Cameron Stocker with faculty advisor Dan Nettleton S2017
- Lab instructor for survey sampling techniques S2014

Miami University, Oxford, Ohio
Graduate teaching assistant, Department of Mathematics
Courses taught as instructor:

- Math 151: calculus I — S2013
- Math 123: precalculus (3 times) — 2011-12

Bloomfield High School, North Bloomfield, Ohio — 2007-11
High school mathematics teacher

Ashtabula County Joint Vocational School, Jefferson, Ohio — 2007-08
High school mathematics summer school teacher

RESEARCH EXPERIENCE

Iowa State University, Ames, Iowa
Research assistant, Department of Statistics — 2015-18
Advisor: Ulrike Genschel

- Developed a predictive model to identify undergraduate students at risk of dropping out of STEM majors

Iowa State University, Ames, Iowa
Research assistant, Center for Survey Statistics and Methodology — 2013
Advisor: Cindy Yu

- Investigated temporal design for National Resource Inventory rangeland longitudinal study

College of Wooster, Wooster, Ohio — 2006
Undergraduate Applied Mathematics Research Experience
Advisor: John Ramsay

- Wrote computer program to project completion times for tire tests at The Goodyear Tire and Rubber Company

AWARDS/RECOGNITION

- Teaching Excellence Award for Graduate Students, Iowa State Univ. — 2018
- Jebe Fellowship, Iowa State Univ. — 2013
- Effective Graduate Teaching Award, Dept. of Mathematics, Miami Univ. — 2013
- SIAM Graduate Student Award, Dept. of Mathematics, Miami Univ. — 2013
- William H. Wilson Prize in Mathematics, College of Wooster — 2007
- William Edgar Hoffman Jr. Prize in Education, College of Wooster — 2007
- Whitney E. Stoneburner Prize in Education, College of Wooster — 2007

PUBLICATIONS

Sage, A. J., & Wright, S. E. (2016). Obtaining cell counts for contingency tables from rounded conditional frequencies. *European Journal of Operational Research*, *250*(1), 91-100.

SUBMITTED WORKS

Sage A.J., Cervato, C., Genchel, U., Ogilvie, C., (2018). Combining academics and social engagement: a major-specific early alert method to counter student attrition in STEM. (under review)

Sage, A. J., Genschel, U., Nettleton, D. (2017). Tree Aggregation for Random Forest Class Probability Estimation. (under review).

PRESENTATIONS

"A Robust Residual Based Approach to Random Forest Regression"
Conference on Predictive Inference and its Applications, Ames IA, May 7, 2018

"A Robust Residual Based Approach to Random Forest Regression"
Joint Statistical Meetings, Baltimore MD, contributed talk, August 3, 2017

"Random Forest Variable Importance"
Research Talk for Dordt College Statistical Genetics and Biostatistics Summer Research group visit to Iowa State University, Ames IA, June 29, 2017

"Impact of Working with Real Data on Perceptions of the Importance of Statistical Inference"
Reviewed Poster, United States Conference on Teaching Statistics, State College PA, May 19, 2017

"Retention of Students in STEM: An Early Alert Project"
Iowa State Advising Summit, April 28, 2017

"A Walk Through a Random Forest"
Invited Talk, Dordt College, Sioux Center, IA, March 23, 2017

"A Walk Through a Random Forest"
Invited Talk, College of Wooster, Wooster OH, December 2, 2016

"Predicting Student Retention in STEM Majors"
Joint Statistical Meetings, Seattle WA, contributed talk, August 10, 2015

"Predicting Student Retention in STEM: A Random Forest Based Approach"
Masters project defense, Iowa State University, March 27, 2015

"Adaptive Survey Design"
Survey Working Group, Iowa State University, March 14, 2014

"The Factoring Likelihood Approach for Maximum Likelihood Estimation in Cases of Missing Data"
Survey Working Group, Iowa State University, November 20, 2013

"The Effect of Rounding on Disclosure in Contingency Tables"
ASA Iowa Chapter Conference, Ames IA, poster presentation, November 1, 2013

PROFESSIONAL ACTIVITIES/ASSOCIATIONS

- Phi Beta Kappa
- American Statistical Association
- Preparing Future Faculty Fellow, Iowa State University
- Project LEA/RN (Learning Enhancement Action / Resource Network) Working Group, Iowa State University