



## EMPLOYMENT

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Postdoctoral Associate	<i>Department of Statistical Science, Duke University</i>	2021-Present
<i>Advised by Dr. Li Ma and Dr. Cliburn Chan.</i>		
Co-Instructor, Data Science	<i>J.P. Morgan Chase &amp; The Ohio State University</i>	2019
Graduate Research Assistant	<i>Nationwide Insurance &amp; The Ohio State University</i>	2018-2019
Graduate Teaching Assistant	<i>Department of Statistics, The Ohio State University</i>	2017-2018
Data Visualization Intern	<i>NORC at the University of Chicago</i>	2016

## EDUCATION

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Ph.D., Statistics, The Ohio State University	Dec 2020
<i>Thesis: "Bayesian Additive Regression Trees: Sensitivity Analysis and Multiobjective Optimization." Advised by Dr. Matthew T. Pratola and Dr. Thomas J. Santner.</i>	
M.S., Statistics, The Ohio State University	May 2017
B.S., Mathematics, University of Maryland	May 2015
<i>Thesis: "Improving Photovoltaics with High Luminescence Efficiency Quantum Dot Layers." Departmental Honors &amp; Gemstone Honors College Citation.</i>	

## AWARDS & HONORS

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Travel Award for ISBA 2022 World Meeting	<i>Scientific Committee of ISBA 2022 WM</i>	2022
Student Travel Award for Joint Statistical Meetings	<i>Quality and Productivity Section, American Statistical Association</i>	2019
Travel Award for Industrial Math/Stat Modeling Workshop	<i>The Statistical and Applied Mathematical Sciences Institute (SAMSI)</i>	2019
Dean's Distinguished University Fellowship (covers first, second, and final year)	<i>Graduate School, The Ohio State University</i>	2015
Undergraduate Researcher of the Year	<i>Maryland Center for Undergraduate Research, University of Maryland</i>	2014

## PUBLICATIONS

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### Preprints

"Tree stick-breaking priors for covariate-dependent mixture models."	Present
<i>A. Horiguchi, C. Chan, and L. Ma. Submitted. (arXiv)</i>	

### Peer-reviewed journal articles

"Using BART to Perform Pareto Optimization and Quantify its Uncertainties."	2022
<i>A. Horiguchi, T. J. Santner, Y. Sun, and M. T. Pratola. Technometrics, Special Issue on Industry 4.0. (html)</i>	
"Assessing variable activity for Bayesian regression trees."	2021

## Thesis Publications <sup>1</sup>

- “Bayesian Additive Regression Trees: Sensitivity Analysis and Multiobjective Optimization.” *A. Horiguchi*, OhioLink. 2020
- “Improving Photovoltaics with High Luminescence Efficiency Quantum Dot Layers.” 2015  
*J. Chen, D. Gagner, K. Griffiths, E. Hitz, A. Horiguchi, R. Joyce, B. Y. Kim, M. Lee, S. Lee, A. Raul, D. Shyu, Z. Siegel, S. Silberholz, and D. Tryan*, Digital Repository at the University of Maryland.

## Open Source Projects <sup>2</sup>

- Covariate-dependent tree stick-breaking. 2022-
- Contributed to the Open Bayesian Trees (OpenBT) project. 2020-

## PRESENTATIONS

Reference: (P)=Poster (T)=Talk (IT)=Invited Talk

### Bayesian Nonparametric Mixture Models

- “Tree stick-breaking priors for covariate-dependent mixture models.” (P) 2022  
*2022 World Meeting of the International Society for Bayesian Analysis (ISBA). Montréal, Canada.*
- “A flexible regression model for flow cytometry data.” (T) 2022  
*Duke Center for Human Systems Immunology (CHSI) Virtual Symposium. Durham, NC.*

### Multiobjective Optimization with BART

- “Using BART for Perform Pareto Optimization and Quantify its Uncertainties.” (IT) 2022  
*2022 World Meeting of the International Society for Bayesian Analysis (ISBA). Montréal, Canada.*
- “Using BART for Multiobjective Optimization of Multiple Noisy Objectives.” (T) 2021  
*Quality and Productivity Research Conference. Tallahassee, FL.*

### Sensitivity Analysis with BART

- “Assessing variable activity for Bayesian regression trees.” (T) *2021 World Meeting of the International Society for Bayesian Analysis (ISBA).* <sup>3</sup> 2021
- “Assessing variable activity for Bayesian regression trees.” (T) *13th International Conference of the ERCIM WG on Computational and Methodological Statistics.* <sup>2</sup> 2020
- “Assessing variable activity for Bayesian regression trees.” (T) *Joint Statistical Meetings.* <sup>2</sup> 2020
- “Assessing variable activity for Bayesian regression trees.” (T) *Spring Research Conference, Oakland University. Rochester, MI. Cancelled due to COVID-19.* 2020
- “Comparing Variance-Based and Count Methods for Assessing Variable Activity in Bayesian Additive Regression Trees.” (P) *Joint Statistical Meetings. Denver, CO.* 2019

### Miscellaneous

- “Increasing Solar Cell Efficiency with a Spin-Coated Layer of Quantum Dots in PLMA.” 2015  
(T) *Team Thesis Conference, University of Maryland. College Park, MD.*

<sup>1</sup>Not peer-reviewed nor planned to be peer-reviewed.

<sup>2</sup>Not peer-reviewed nor planned to be peer-reviewed.

<sup>3</sup>Moved online due to COVID-19.

- “Transcription Factors and Cascade Network.” (T) *Summer Undergraduate Research Symposium, The Ohio State University. Columbus, OH.* 2014
- “Transcription Factors and Cascade Network.” (T) *Summer Undergraduate Research Symposium, Virginia Polytechnic Institute and State University. Blacksburg, VA.* 2014
- “Increasing Solar Cell Efficiency with a Spin-Coated Layer of Quantum Dots in PLMA.” (P) *Undergraduate Research Day, University of Maryland. College Park, MD.* 2014
- “No-Analog Communities in Space and Time.” (T) *NIMBioS Undergraduate Conference, University of Tennessee. Knoxville, TN.* 2013

## APPLIED RESEARCH EXPERIENCE

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- SAMSI Industrial Math/Stat Modeling Workshop for Graduate Students *North Carolina State University. Raleigh, NC* 2019
- NSF Research Experiences for Undergraduates *Biocomplexity Institute of Virginia Tech. Blacksburg, VA.* 2014
- Bill Fagan Lab, Undergraduate research assistant *University of Maryland. College Park, MD.* 2013-2014
- Munday Lab, Gemstone Honors Program *University of Maryland. College Park, MD.* 2012-2015

## TEACHING

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Reference: (SP)=Spring (AU)=Autumn e.g. (SP19)=Spring 2019

### The Ohio State University

- BUSMGT 7256: Tools for Data Analysis Co-instructor (SP19)  
This course is designed to introduce students to commonly used software programs in data science and improve students' problem solving skills and logical thought processes. Students will be exposed to R, SAS, and SPSS.
- STAT 5760: Statistical Consulting Support from the SCS Teaching assistant (SP18)  
Graduate or undergraduate students enrolled in this course will work with a graduate student consultant employed by the Statistical Consulting Service (SCS) for the purpose of making progress on their thesis or dissertation.
- STAT 6301: Probability for Statistical Inference Grader (AU17)  
Introduction to probability, random variables, and distribution theory; intended primarily for students in Master of Applied Statistics (MAS) degree program.
- STAT 5302: Intermediate Data Analysis II Grader (AU17)  
The second course in a two-semester sequence in data analysis covering simple linear regression (inference, model diagnostics), multiple regression models, variable selection, model selection, two-way ANOVA, mixed effects model.

## SERVICE

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Reference:

- JASA = Journal of the American Statistical Association  
ISBA = International Society for Bayesian Analysis  
GID = Graduate Information Day

Reviewed for JASA.	2022
Member of ad hoc committee on junior awards and support offered by ISBA.	2021
Presented research at the first student-led Student Research Seminar.	2020
Presented research to prospective graduate students at GID at OSU.	2020
Panelist of the funding and internship session for GID at OSU.	2018, 2019
Volunteered at math booth for Maryland Day.	2014, 2015
President of Pi Mu Epsilon Math Honor Society, UMD chapter.	2013-2014