

# Yida Bao, Ph.D.

227 Jarvis Hall-Science Wing, Menomonie, WI, 54751

☎ (334) 524-8871 • ✉ yzb0010@auburn.edu

## Education

### Shanghai University

*Bachelor's Degree in Mathematics*

Shanghai, China

### Auburn University

*Master of Science in Probability and Statistics*

Thesis Topic: A Comparative Study of Cronbach's Alpha and Various Classification Techniques

Advisor: Philippe Gaillard

Auburn, AL

### Auburn University

*Master of Science in Data Science*

Thesis Topic: Prophet vs. ARIMA: Forecasting LMP for an Alabama Electronics Firm

Advisor: Roberto Molinari

Auburn, AL

### Auburn University

*Ph.D. in Mathematics*

Thesis: Theory Update and Application of Hopfield Neural Networks in Deep Learning

Advisor: Maggie Han

Auburn, AL

2018–2024

## Professional Employment

### University of Wisconsin, Stout

*Assistant Professor*

Conducted research in data science and machine learning, taught various statistics courses, and developed new statistic and AI courses, and sought research grants. Responsibilities also included preparing lectures, designing assessments, and supporting student learning. Each class comprised 30-40 students.

Menomonie, WI

Aug 2024–Present

### Auburn University

*Instructor and Teaching Assistant*

Responsibilities included preparing and delivering lectures, designing course materials, exams, homework, and quizzes, assessing student performance, and engaging with students for additional learning support. Each class comprised 50-60 students.

Auburn, AL

Aug 2018–2024

## Publications

1. **Yida Bao**, Zheng Zhang, Jiafeng Ye, Liangliang Xu, Tao Jiang, Philippe Gaillard, "Evaluating Internal Consistency of Questionnaire Data," *MWSUG* 2024.
2. Zheng Zhang, Amit Das, Mostafa Rahgouy, **Yida Bao**, Sanjeev Baskiyar, "Multi-Label Classification of CS Papers Using Natural Language Processing Models," *22nd IEEE International Conference on Machine Learning and Applications (ICMLA)*, 2023.
3. Zheng Zhang, Liangliang Xu, **Yida Bao**, Sanjeev Baskiyar, "Towards the Diagnosis of Heart Disease Using an Ensemble Learning Approach," *22nd IEEE International Conference on Machine Learning and Applications (ICMLA)*, 2023.
4. **Yida Bao**, Auburn University, Philippe Gaillard, Florida State University, "Potential Variables Analysis Affects COVID-19 Spread," *PharmSUG* 2022. [Link](#)
5. Ayine, Priscilla, Vaithinathan Selvaraju, Chandra M. K. Venkatapoorna, **Yida Bao**, Philippe Gaillard, and Thangiah Geetha, "Eating Behaviors in Relation to Child Weight Status and Maternal Education," *Children* 8, no. 1 (2021): 32. [Link](#)
6. Guo, Jingping, **Yida Bao**, Robert Davis, Ash Abebe, Alan E. Wilson, and Donald Allen Davis, "Application of Meta-Analysis Towards Understanding the Effect of Adding a Methionine Hydroxy Analogue in the Diet

on Growth Performance and Feed Utilization of Fish and Shrimp," *Reviews in Aquaculture* 12, no. 4 (2020): 2316-2332. [Link](#)

7. Holland, Merrilee, Judith Hudson, **Yida Bao**, and Philippe Gaillard, "Aortic to Caudal Vena Cava Ratio Measurements Using Abdominal Ultrasound Are Increased in Dogs with Confirmed Systemic Hypertension," *Veterinary Radiology & Ultrasound* 61, no. 2 (2020): 206-214. [Link](#)
8. **Yida Bao**, Zheran Wang, Jingping Guo, Philippe Gaillard, Auburn University, "Special Plots Methods with Diabetes Disease Data," *PharmSUG 2020*. [Link](#)
9. **Yida Bao**, Dr. Philippe Gaillard, Auburn University, "Application and Comparison with Several Types of Ensemble Algorithms," *SESUG 2020*. [Link](#)
10. **Yida Bao**, Dr. Philippe Gaillard, Auburn University, "Summarizing Some Conventional Methods to Classify a Binary Target," *SESUG 2019*. [Link](#)

## Under Review

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1. Zheng Zhang, Yida Bao. Development of an Inference Architecture for Drivers' Reliability in Autonomous Mode for Level-3. Under review for publication in IEEE Access.

## Skills

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**Programming Languages:** Python, R, SAS, SQL

## Awards and Honors

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**2019:** SESUG, Williamsburg, VA, Student Academic Grant

**2020:** PharmSUG, San Francisco, CA, Student Academic Grant

**2022:** PharmSUG, Austin, TX, Student Academic Grant

**2022:** PharmSUG, Austin, TX, Best Conference Paper

**2024:** MWSUG, Milwaukee, WI, Junior Professional Program Scholarship

## Certifications

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### **SAS® 9.4 Base Programming Performance-Based**

This certification demonstrates a thorough understanding of the foundational skills necessary for SAS programming, including data manipulation, analysis, and reporting.

### **SAS® 9.4 Advanced Programming Using SAS® 9.4**

This advanced certification indicates a higher level of expertise in SAS programming. It covers sophisticated techniques like macro processing, SQL, and advanced data manipulation.

### **Applications of AI for Anomaly Detection — Nvidia Certification**

This certification focuses on the application of advanced AI techniques. It is a testament to the ability to implement cutting-edge AI methods for identifying irregular patterns and anomalies in data, a skill highly valuable in fields like cybersecurity, finance, and predictive maintenance.

## PhD Qualifying Exams Passed

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**Statistics:** Passed the qualifying examination in Statistics, demonstrating proficiency in probability theory, statistical inference, and advanced statistical methods.

**Applied Mathematics:** Passed the Applied Mathematics qualifying exam, demonstrating proficiency in integral equations, differential operators, calculus of variations, transform and spectral theory, and asymptotic expansions.

**Geometry:** Passed the qualifying examination in Geometry, with a focus on topics such as differential geometry, algebraic geometry.

## Teaching Experience

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Courses Lecturer.....

**STAT-130 Elementary Statistics:** Fall 2024

**STAT-330 Statistics for Engineers and Scientists:** Fall 2024, Summer 2023

**STAT-7000 Experimental Statistics:** Spring 2022

**Math 1620 Calculus II:** Fall 2022, Fall 2023, Spring 2024

**Math 1610 Calculus:** Fall 2020, Spring 2021, Fall 2021

**Math 1150 Precalculus:** Fall 2019, Spring 2020

Grader Roles.....

**STAT-3010 Statistics for Engineers:** Spring 2023

**STAT-3600 Probability and Statistics:** Spring 2022

**Math 2650 Linear Differential Equations:** Fall 2020, Spring 2021

**Math 1610 Calculus:** Fall 2018

**Math 1120 Precalculus:** Spring 2019

## Teaching Interests

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*Areas of expertise include:* Business Analysis, Introduction to Statistics, Advanced Statistical Theory, Multi-variate Statistics, Machine Learning Algorithms, Programming in Python, SAS & R, Precalculus, Calculus, Linear Algebra, Ordinary Differential Equations.

## Academic Reviewer

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**Topics in Companion Animal Medicine**

*Reviewer* 2020–Present

**Imaging Science Journal**

*Reviewer* 2022–Present

**Plos One**

*Reviewer* 2024–Present

## Conference Presentations & Seminar Talks

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**2019:** Summarizing some conventional methods to classify a binary target, SESUG, - Talk

**2020:** Special Plots methods with diabetes disease data. PharmSUG, - Poster

**2022:** Application and comparison with several types of Ensemble Algorithms, PharmSUG - Poster

**2022:** Potential Variables Analysis Affects Covid-19 Spread, PharmSUG, - Talk

**2023:** Multi-Label Classification of CS Papers Using Natural Language Processing Models. (ICMLA) - Talk

**2023:** Towards the Diagnosis of Heart Disease Using an Ensemble Learning Approach. (ICMLA) - Talk

**2024:** Evaluating Internal Consistency of Questionnaire Data. (MWSUG) - Talk