

Daniel Tuyisenge

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SUMMARY

I work at the intersection of uncertainty quantification, especially tolerance intervals, privacy-aware survey methods, and multivariate modeling. I build intuition from first principles, mentor analysts to think ethically, and make complex results feel simple. Collaborative, steady under pressure, and relentlessly practical, I turn statistical evidence into clear choices people can act on.

EDUCATION

University of Kentucky

Ph.D. Candidate in Statistics

Dissertation: Application of Tolerance Intervals in Survey Data Analysis (Dr. Dereck Young)

Lexington, KY

Expected 2026

Ball State University

M.S. Actuarial Science

Muncie, IN

2018

Wofford College

B.S. Applied Mathematics and Physics

Spartanburg, SC

2016

SKILLS

Programming Languages: R (5 years), SAS (1 year), Python (1 year)

Tools: Excel, LaTeX, HTML/CSS

Soft Skills: Clear communication, collaboration & leadership, problem solving & critical thinking

STATISTICAL PROJECTS

Research Assistant, Predictive Analytics and Data Science (PADS) Hub, University of Kentucky

Recovery Analysis (Suntory Global Spirits/Jim Beam)

May 2025-July 2025

- Built recovery, weather, and leak models from multi-warehouse orders, delivered clean datasets, a report, and reproducible code.
- Found plant/warehouse differences in recovery, key predictors, modest forecasting accuracy (~10–30% within 1% of observed), weather signals (temperature/pressure/humidity), and higher leak odds tied to plant and tank type.
- Recommended targeting process improvements at lower-recovery sites/warehouses, preserving consistent FFB practices, adding season/weather-based monitoring, and prioritizing leak mitigation on cistern tanks and higher-risk plants.

Statistical Validation of ACSF Decision Tree (UKY Healthcare Studies)

May 2024-July 2024

- Compared the web algorithm's classifications with parent-selected ratings from the Autism Classification System of Functioning (ACSF) for children's social communication
- Found low agreement, 27% (Typical Algorithms) and 19% (Best Algorithms), with mismatches more frequent in Best than in Typical evaluations.
- Recommended refining the decision tree to allow more flexible, context-aware choices, pilot with parents, and re-test.

Predicting Corrosive Condensation Events (Suntory Global Spirits / Jim Beam)

May 2022-July 2022

- Analyzed sensor data (temperature, humidity, dew point, GPP) across nine warehouses to detect and profile indoor condensation.
- Found the highest risk on first floors and in winter/early spring, with consistent pre-event warning patterns.
- Recommended targeted dehumidification/airflow on first floors, pre-winter checks, and real-time alerts triggered by the warning patterns.

Predictive Modeling for Monthly Median Rent (University of Kentucky, Data Science Competition 2022)

- Built a county-level model of 5-year average monthly rent using U.S. Census housing and demographic data.
- Found key drivers of the variables, such as household income, vehicle access, homeownership, race, and mortgage values, explain 66% of rent variability after accounting for the number of predictors.
- Recommended a simple map dashboard with periodic data refreshes; presented findings department-wide and placed 2nd overall

TEACHING EXPERIENCE

Dr. Bing Zhang Department of Statistics (University of Kentucky)

Lexington, KY

Teaching Assistant

August 2021 – Present

- Taught STA 296 and STA 210 (F22; F23, Sp24, F24, Sp25).
- Reviewed NIH-style grant proposals for study design, analyses, and reporting.
- Advised graduate students on master's thesis for data analysis

Mysa School

Washington, DC

High School Teacher

Sept 2018 – Aug 2021

- Taught Algebra I–II, Pre-calculus, and General Physics using a competency-based, mastery-focused approach.
- Organized STEM field trips to reinforce concepts.
- Communicated weekly with families on progress, tailoring supports and pacing each student.

Department of Mathematical Sciences (Ball State University)

Muncie, IN

Graduate Teaching Assistant

August 2016 – May 2018

- Updated the department website using HTML/CSS, improving navigation and content accuracy.
- Tutored undergraduates in mathematics, physics, Python, and Mathematica through labs and office hours.
- Graded and maintained the Canvas gradebook for about 100 students per semester, ensuring timely, accurate feedback.

LEADERSHIP AND SERVICE

Statistics Graduate Students Association, SGSA (University of Kentucky)

Lexington, KY

President

- Hosted Medpace recruiter talk (Nov 2023) and led a networking visit to Medpace & STATKING (Jan 2023).
- Secured Graduate School Congress funding and organized the Data Challenge for first-year stats students.
- Represented students at monthly faculty meetings and coordinated monthly social events.

Jambo Africa African Student Association (Wofford College)

Spartanburg, SC

President

September 2015 – May 2016

- Led a leadership team of 4 serving about 30 members, managed the budget, and delivered 10+ campus programs.
- Hosted a headline event in March 2016 with 500+ attendees; coordinated contracts, logistics, and marketing.
- Secured student-government funding and launched tutoring outreach with local after-school programs.

AWARDS

- SGSA Data Science Competition (2nd Place, 2022).
- CRLA (College Reading and Learning Association) Tutoring Certification (Fall 2017).
- Leadership Award, President, Jambo Africa African Student Association at Wofford College (Spring 2016).
- Presidential Scholarship (2012–2016).

CONFERENCE

- Joint Statistical Meetings (JSM), August 2025. Presented a 15-minute talk: “Tolerance Intervals of Randomized Response Techniques.”

PUBLICATION

- Tuyisenge, D., & Young, D. S. (2025). *Tolerance Intervals of Randomized Response Techniques*. Manuscript submitted for publication.