Samuel K. Balls

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EDUCATION

B.S. in Statistics 											April 2025
Department of Statistics
Brigham Young University, Provo, UT
Minor: Mathematics
GPA: 3.94/4.0

HONORS & AWARDS

Dean's List - Awarded Fall 2023, Winter 2023, and Winter 2024
Merit-based Scholarship - Awarded half-tuition for academic excellence, 2023 – 2025

RESEARCH INTERESTS

- Bayesian Statistics
- Statistical Learning
- Algorithmic Fairness and Ethical AI

RESEARCH EXPERIENCE

Statistical Research Assistant 						April 2024 – Current
Brigham Young University, Provo, UT
Advisor: Jake Rhodes

- Developed Python implementation of Random Forest Geometry- and Accuracy-Preserving (RF-GAP) proximities for data imputation, improving skills in NumPy, pandas, scikit-learn, and Matplotlib

- Conducted literature review on missing data imputation, evaluating techniques for measuring imputation quality and identifying current best methods for imputation

- Currently benchmarking RF-GAP imputation against various methods across multiple datasets, in both supervised and unsupervised cases, and with different levels of missingness

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TEACHING EXPERIENCE

Teacher's Assistant - Statistics 				December 2022 – December 2023
Brigham Young University, Provo, UT

- Oversaw performance of over 40 students, conducting outreach for one-on-one assistance

- Produced weekly review presentations and instructed 100+ students on challenging statistics concepts

- Inspected students' work with quality and efficiency, while providing quick instructive feedback

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Leadership

Statistical Science Representative April 2024 – Current
BYU Statistics Association

Academic Experience

Completed Coursework: Calculus I-III, Linear Algebra, Mathematical Statistics, Probability, Real Analysis I, Fundamentals of Mathematics, Applied R Programming, Introduction to Computer Science, Statistical Modeling I

Upcoming Coursework: Statistical Modeling II, Data Science Process, Bayesian Statistics, Predictive Analytics, Machine Learning, Analysis of Correlated Data

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Work Experience

Analytics Intern October 2023 – April 2024
Extra Space Storage, Salt Lake City, UT

- Translated complex datasets into clear visualizations, facilitating a more accessible understanding of business trends and contributing to improved strategic planning

- Utilized Python and SQL programming languages to perform in depth data analysis, deriving insights which enhanced customer acquisition and increased revenue

- Collaborated with cross-functional teams to identify data-driven opportunities, improve operational efficiency, and optimize resource allocation

Consulting Intern June 2023 – July 2023
Airbus (via the Beacon Fellowship), Madrid, Spain

- Evaluated economic value creation of rapid prototyping for world's largest commercial airplane manufacturer

- Compared business model (financing, tech capabilities, operations, marketing) of in-house lab against direct competitors (Boeing, Northrop Grumman, Raytheon, Lockheed Martin) and 6 other industry leaders

- Conducted 8 expert interviews to identify best practices for operation and presented success plan to executives

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Skills

- **Programming Languages:** Python, R, SQL
- **Languages:** English, Spanish

Memberships

- American Statistical Association 2024 - Current
- International Society for Bayesian Analysis 2024 - Current