

# 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

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## HONORS & AWARDS

**Dean's List** - Awarded Fall 2023, Winter 2023, Winter 2024, and Fall 2024

**Merit-based Scholarship** - Awarded half-tuition for academic excellence, 2023 – 2025

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## RESEARCH INTERESTS

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

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## 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

## LEADERSHIP

**Mentor & Statistical Science Representative**  
BYU Statistics Association

April 2024 – Current

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## 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, Statistical Modeling II, Data Science Process, Introduction to Bayesian Statistics, Predictive Analytics, Readings in Sports Analytics

**Upcoming Coursework:** Applied Bayesian Statistics, Analysis of Correlated Data

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## WORK EXPERIENCE

**Analytics Intern**  
Extra Space Storage, Salt Lake City, UT

October 2023 – April 2024

- 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**  
Airbus (via the Beacon Fellowship), Madrid, Spain

June 2023 – July 2023

- 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

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## MEMBERSHIPS

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