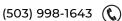# SAMMY SHAW

sclay.shaw@gmail.com

https://www.linkedin.com/in/sammy_shaw

(503) 998-1643

https://sammyshaw.github.io:

## PhD | DATA SCIENCE | ANALYTICS | RESEARCH

## SUMMARY

*Data storyteller and problem solver leveraging advanced analytics and research project skills from experiences across data science, social science, policy research, and education. As a Ph.D. in Sociology, I draw on a breadth of quantitative and qualitative methods to generate actionable insights that enhance collaborative processes and drive strategic decision-making.*

## SKILLS

**Data Science & Analytics:** Python | R | SQL | Tableau | Statistical modeling | Machine Learning | Data Cleaning & Processing | Data Visualization | Optimization

**Project Management**: Research Design | Multi-Phase Projects | Interdisciplinary Collaboration | Grant Acquisition & Management | Team Leadership | Performance Measurement | Strategic Planning & Decision Making

**Communications**: Technical Writing | Visualization and Dashboard Creation | Public Speaking | Report Writing | PR Writing | Publications

**Research:** Quantitative & Qualitative Methods **|** Survey Research & Questionnaire Construction **|** Ethnography **|** UX Research

## DATA PRODUCTS

### Fantasy Basketball Player Ranker  March - April, 2025
- Built an ETL (Extract, Transform, Load) pipeline that ends with an interactive user endpoint using Python and Streamlit
- Developed custom *SHAW* (Sigmoid Harmonic Attempt Weighting) percentage transformations to optimize existing ranking algorithms
- Constructed and compared six unique ranking algorithms, several of which performed better than industry standard rankings, ESPN and Yahoo.com

### Toy Robot - CNN  Feb - March 2025
- Trained a *Convolutional Neural Network* to recognize distinct classes of children's toys using a self-collected, custom data set of 725 images
- Employed transfer learning to achieve 100 percent prediction accuracy

### GSS Dashboard  Jan - Feb, 2025
- An interactive Tableau dashboard providing a comprehensive analysis of 50 years of General Social Survey data. Designed for public accessibility and user engagement
- Developed and validated multiple custom index measures (social health, confidence in institutions, social attitudes) using *PCA*, and *reliability analyses*

### Machine Learning for Business Analytics Series  Oct - Nov, 2024

- "You Are What You Eat" - Applied *K-means clustering* on a grocery store's customer database to segment-up and better understand key types of shopping behavior, thus facilitating targeting accuracy and customer communications
- Enhancing Targeting Accuracy - Applied *Machine Learning Classification* tasks including *Logistic Regression, Random Forest, and KNN* models to predict customer subscription sign-ups with 94 percent accuracy, thus optimizing targeting efficiency, and lowering costs
- Predicting Customer Loyalty - Applied *Machine Learning Regression* tasks including *Linear Regression, Decision Tree, and Random Forest* models to predict loyalty with 95 percent accuracy, thus allowing more accurate and relevant customer tracking, targeting, and communications

**EXPERIENCE**

**Eastside Preparatory School** - Social Science Faculty
*2020 - 2024*
- Created 400+ educational resources, emphasizing reproducible research, data analysis, and hypothesis testing.
- Led and managed stakeholder communications for 50+ student advisees
- Designed and delivered curriculum emphasizing critical thinking skills

**Seattle Waldorf School** - Social Science Faculty
*2019 - 2020*
- Facilitated inquiry- project-based learning for diverse student groups across a range of social science and humanities disciplines

**Vanderbilt University** - Lecturer in American Studies
*2014 - 2017*
- Designed and taught research-driven courses on topics in American Race Relations
- Mentored students through complex research projects involving data collection, analysis and reporting

**The Aspen Institute** - Consultant Researcher / Data & Policy Analyst
*2016*
- Produced quantitative, proof-of-concept report, and strategic recommendations in support of Senate Bill (S.977 – American Too Royalties Act); delivered in a public address to the chairs of artist-endowed charitable organizations in the U.S.

**Vanderbilt / Curb Center for Arts, Enterprise & Public Policy** - Research Fellow
*2013 - 2014*
- Designed and conducted community based research engaging 20+ stakeholders on cultural and development policy impacts.
- Produced report bridging academic research with policy support and recommendations.

**Vanderbilt University** - Graduate Reseacher
*2010 - 2013*
- Conducted mixed-methods research on artist career pathways, securing and managing three successful research grants
- Authored four peer-reviewed publications on the topics of urban development and cultural production

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**EDUCATION**

**PhD, MA (Sociology)**
2014 - Vanderbilt University - Nashville, TN
**MA (Sociology)**
2005 - Portland State University, Portland, OR
**BA (Sociology)**
1999 - University of Oregon, Eugene, OR

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**COURSES & CERTS**

**Data Science Professional Certification** - Data Science Infinity, **Dec 2024**

SQL | Tableau | Python (Numpy, Pandas, MatPlotLib, Streamlit, SciKitLearn, Keras) | Statistics | Linear & Logistic Regression | Machine Learning | Deep Learning | AWS | GitHub | Docker

**Data Science Foundations Using R Certification** - John Hopkins /Coursera, **2017**

R Programming | The Data Scientists Toolbox | Reproducible Research | Getting and Cleaning Data | Exploratory Data Analysis | Statistical Inference | Regression Models

**Google UX Design Professional Certificate** (incomplete) - Coursera, **July 2024**
Foundations of User Experience Design | UX Design Process: Empathize, Define & Ideate