SAMMY SHAW

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PH.D | DATA SCIENCE | ANALYTICS | RESEARCH

SUMMARY

I bring a deep foundation in data analysis, statistical modeling, and research design, honed through years of academic and applied work. While my career path includes a decade in education, my expertise in data-driven problem-solving has remained constant. Recently, I upskilled in machine learning, deep learning, and business analytics, applying these tools to build models, extract insights, and solve real-world challenges.

SKILLS

Languages & Tools: SQL | Python | R | Tableau | ATLAS.ti | AWS | SPSS | Github
Data Science & Machine Learning: Data Cleaning & Preprocessing | Statistical modeling | A/B (hypothesis) testing | Linear & Logistic Regression | Decision Tree | Random Forest | KNN | PCA | Association Rule Learning | Deep Learning (ANN, CNN)
Research & Data Analytics: Quantitative & Qualitative Methods | Visualization | End-to-end Research Design | Survey Methods | UX Research | Ethnography | Business Analytics

DATA/RESEARCH/ACADEMIC PROFESSIONAL → **DATA SCIENTIST**

- 2005: *MA Thesis* Survey Research, Quantitative Analysis
- 2011-12: *Publication Stream* Mixed Methods Urban Sociology
- 2014: *Dissertation following* years of data collection and analysis
- 2014-17: *University Teaching*
- 2018-24: *Social Science Faculty* at Seattle Independent Prep Schools
- 2024: *Data Science Certification*, upskilling tools, technology, and methods
- 2024-2025: *Project Portfolio* emphasizing statistics, machine learning, deep learning, and business analytics

PROJECTS

Toy Robot - CNN Feb - March 2025

- Trained a ***Convolutional Neural Network*** to recognize distinct classes of 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

- A labor-of-love project, I built a dashboard in ***Tableau*** Public to celebrate 50 years of the General Social Survey, making its data more publicly accessible
- Utilized ***PCA***, and ***reliability analyses*** to construct ten core index measures with over 72,000 data points
- Designed a balance of ***data storytelling*** and interactivity, emphasizing trend, geographic, demographic, and political ***visualization***

Machine Learning for Business 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

2020 - 2024 - **Social Science Faculty**, Eastside Preparatory School

- Authored over 400 educational resources, making use of data storytelling methods and data collection instruction
- Taught, assessed, and improved learning experiences for over 400 students
- Led and managed stakeholder communications for over 60 student advisees
- Designed and delivered curriculum emphasizing *science* and critical thought including reproducible research, data analysis, and hypothesis testing

2019 - 2020 - **Social Science Faculty**, Seattle, Waldorf School

2014 - 2017 - **Lecturer in American Studies**, Vanderbilt University

2016 - **Consultant Researcher / Data & Policy Analyst**, The Aspen Institute

- Collected and analyzed quantitative data and authored report in support of Senate Bill (S.977 – American Too Royalties Act) benefiting over 400 artist-endowed charitable organizations in the U.S.

2013 - 2014 - **Research Fellow,** Curb Center for Arts, Enterprise & Public Policy

- Designed and conducted the Wedgewood-Houston neighborhood study involving 20+ neighborhood and community stakeholders

2010 - 2013 - **Lead Reseacher,** Vanderbilt University

- Mixed-methods dissertation on Artist Career Pathways and the unique role of *place*
- Identified secured funding opportunities, prepared and managed budgets for three successive grant proposals
- Authored four peer-reviewed publications on the topics of urban development and cultural production

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

COURSES & CERTS

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

Data extraction and analysis using SQL | Statistics | AB/hypothesis tests (t-test, chi-square tests) | Github for version control and collaboration | Python for data analysis, manipulation & visualization | ML data preparation(missing values, categorical variable encoding, outliers, feature scaling, feature selection & model validation) | Machine Learning algorithms for regression, classification, clustering, association rule learning, and causal impact analysis | Machine Learning pipelines for streamlining pre-processing & modelling | Deployment of a ML pipeline using Streamlit | Tableau for Data Visualizations | Business Problem-solving and Data solutions

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