# Brandon P. **Pipher**

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## Experience

### United States Census Bureau
*Suitland, MD*

Supervisory Mathematical Statistician (GS-1529-13) *July 2021 - Present*

- Lead data-driven projects leveraging advanced statistical and machine learning methodologies within the Decennial Statistical Studies Division's Sampling Branch.
- Spearhead research and development for the 2030 Post-Enumeration Survey (PES), improving coverage estimation by integrating administrative records with Census data and employing innovative modeling approaches.
- Conduct research for the Continuous Count Study, enhancing intercensal population estimates through linkage of Census products, commercial data, and government administrative records. Applied statistical learning methods including Log-Linear and Latent Class modeling. Presented findings at the 2024 Joint Statistical Meetings and the 2024 Federal Committee on Statistical Methodology.
- Designed and executed statistical programming for the 2020 Post-Enumeration Survey (PES), developing an Inmover probability imputation model and applying advanced feature selection to improve the accuracy of coverage estimates.
- Developed and applied graph theory and network-based methods to enhance residence assignment and household inference from administrative data, improving accuracy of person-to-household linkage and residence imputation models.

### Nations Lending Corporation
*Independence, OH*

Quantitative Modeling and Research Analyst *Sept. 2020 - July 2021*

- Partnered with Risk Management, Compliance, and Product teams to create automated reports and dashboards, providing insights on Key Performance Indicators (KPIs) and Objectives and Key Results (OKRs) using statistical modeling and data science techniques.
- Delivered high-impact analytical summaries to senior leadership, developing flexible reporting solutions to drive strategic decision-making and monitor performance indicators.
- Built time series forecasting models using public data to predict quarterly mortgage loan origination volume, optimizing workforce allocation and reducing operational costs.
- Applied Natural Language Processing (NLP) to analyze mortgage process documentation, uncovering bottlenecks and reducing closing times through machine learning-based workflow improvements.

## Education

### Kent State University
*Kent, OH*

Master of Science in Applied Mathematics *Aug. 2017 - Dec. 2019*

- GPA: 3.9
- Thesis: Comparison of Regression Methods with Non-Convex Penalties

### University of Akron
*Akron, OH*

Bachelor of Science in Mathematics, Minor in Statistics *Aug. 2013 - May 2017*

- GPA: 3.6
- Graduated *cum laude*
- Member of Phi Sigma Alpha: Buchtel College of Arts and Sciences Scholastic Honorary Society
- Member and Treasurer (2016-2017) of Pi Mu Epsilon: Mathematics Honorary Society (Ohio Nu Chapter)

## Skills

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|---|---|
| **Programming Languages** | Python, R, SAS, SQL, Bash, DAX, Regex, LaTeX |
| **Libraries & Frameworks** | Scikit-Learn, Tidyverse, NetworkX, Shiny, Plotly, NLTK |
| **ETL & Query Tools** | PostgreSQL, Amazon Redshift, psql, pgAdmin, Microsoft SQL Server |
| **Development Tools** | Visual Studio Code, Git, RStudio Server, Jupyter, SAS Studio |
| **Visualization** | Power BI, Tableau, JMP, Minitab, GoodData |
| **Cloud & Big Data** | AWS EC2, AWS S3, AWS SageMaker, Apache Spark |

## Professional Development

### U.S Census Bureau — *Suitland, MD*

Data Science Training Program - Machine Learning Track — *Jun. 2024*

- Participated in the Statistical Product First Capstone Project, developing innovative methods to deliver statistical products that address the complex and varied needs of stakeholders. Designed accessible, public-use tools enabling users of all technical backgrounds to efficiently leverage government data.
- Analyzed historical Grants.gov award data, stakeholder personas, interview transcripts, and Common Crawl data to anticipate and identify stakeholder needs. Applied Natural Language Processing to infer data domains and align them with suitable data products. Delivered tailored insights and visualizations to streamline stakeholder access to relevant information.

### American Statistical Association (ASA) - Kentucky Chapter — *Lexington, KY*

Analysis of Big Healthcare Databases - Short Course taught by Rebecca Hubbard — *Oct. 2020*

- Explored the design and analysis of research studies using large-scale Electronic Health Records (EHR) databases.
- Addressed challenges of unstructured, complex, and incomplete data by applying advanced data science methodologies to derive robust analytical solutions.

### American Statistical Association (ASA) - Kentucky Chapter — *Lexington, KY*

Successful Data Mining in Practice - Short Course taught by Richard De Veaux — *Oct. 2018*

- Attended a hands-on workshop focused on statistical engineering approaches to solving real-world “Big Data” challenges.
- Worked through case studies drawn from decades of industry consulting experience, illustrating effective data mining practices at scale.
- Emphasized the importance of domain knowledge and data relevance in achieving meaningful outcomes—beyond simply applying powerful algorithms to large datasets.