Nathalie Jones, M.S.

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Summary

Dedicated to harnessing the transformative power of mathematics and data science, I am passionately committed to leveraging innovative methods to develop solutions that support human users in the extraction of valuable information in large, complex data reservoirs

Education

Kennesaw State University

	GPA	Graduation
Master of Science in Data Science and Analytics	4.0	**Dec 2023**
Bachelor of Science in Computational and Applied Mathematics *Minor in Applied Statistics and Analytics*	2.8	**Dec 2021**

Publications

1. **"Faculty Awareness Project" (Under Development)** *– First Author* — **Dec 2023**
   o Developed and deployed a survey to explore faculty knowledge of campus services that aid students experiencing homelessness

2. **"Breaking the Cycle"** *– Co-Authored Article* — **Oct 2023**
   o Co-authored an article summary of work conducted by my lab director where she evaluated college support programs for former foster youth

Awards & Honors

I. **Keynote Speaker at KSU's Fall Analytics Day**	**Nov 2023**
II. **Awarded $250 prize at KSU's Spring Analytics Day 2023**	**May 2023**
III. **Awarded School of Data Science & Analytics Annual Scholarship**	**Aug 2023**
IV. **KSU published recognition of my conference acceptances in 2022**	**Aug 2022**
V. **Awarded $250 Prize at KSU's Fall Analytics Day 2021**	**May 2021**

Conferences

1. **Southeastern SAS User Group 2023**	**Oct 2023**
2. **Harvard's National Collegiate Research Conference 2022**	**Jan 2022**
3. **Posters on the Hill 2022**	**Apr 2022**
4. **Posters at the GA Capitol 2022**	**Apr 2022**
5. **Kennesaw State University Bi-Annual Analytics Day**	**Apr/Nov 2021 – 2023**

Work Experience

1. **CARES Research Lab** *– Graduate Research Assistant* — **Aug 2022 – Dec 2023**
   o Developed research on foster and homeless youth in higher education

2. **IHG Hotels & Resorts: Summer Internship** *– Data Science Internship* — **Jul 2023 – Aug 2023**
   o Analyzed the ROI of a promotional campaign and presented my findings to the head of advanced analytics and C-suite executives

3. **Graduate Teaching Assistant** — **Jan 2022 – May 2022**
   o Assisted students by helping them develop their code, create visuals, and find 3rd-party data that can be brought into their analysis

Posters, Papers, & Presentations

1. **"An Efficacy Rating for March Madness Tournament Seeding"** *– Coded in Python, SAS*
   o Developed an 'Efficacy Rating' for the NCAA March Madness tournament, enhancing tournament seeding fairness and predictability **Dec 2023**

2. **"Charting the Course: A Data Driven Approach"** *– Coded in R, Python*
   o Scraped PhD program information and faculty data from 220 programs across 60 U.S. universities **Nov 2023**

3. **"Mapping Post-Secondary Transfer Rates"** *– Coded in R, Python*
   o Studied the association between institutional transfer rates and the number of schools within 100 miles of each other **May 2023**

4. **"Why Withdraw?"** *– Coded in R, Python, SAS*
   o Continued research into the CollegeScorecard with a longitudinal analysis on post-secondary withdrawal rate **Dec 2022**

5. **"Classification of Pell Institutions"** *– Coded in R, Python*
   o Used R and Python to clean, structure, and create/compare several models including XGBoost, PCA, Random Forest, and Logistic Regression **Dec 2021**

6. **"Does the Pell Grant Come with a Price?"** *– Coded in R, Python*
   o Spatially joined the U.S. Census with the CollegeScorecard to analyze associations between debts accumulated by either an independent or dependent student **Dec 2021**

7. **"Two-Layer Neural Network"** *– Coded in Python*
   o Created a 0, 1, or 2-layer neural net in Python as a class object to predict whether an individual in 1994 earned $50,000 or more from Census data **May 2021**

8. **"Access to Higher Education"** *– Coded in R*
   o Conducted research using parametric and nonparametric methods to study student outcomes and institutional attributes associated with schools where a majority proportion of students receive a Pell Grant **May 2021**

Corporate Projects

1. **"Detecting Data Oddities"** *– Team Project Coded in R, Python*
   o Wrangled 460 million reservation activities provided by IHG Hotels & Resorts to create easy-to-use detection tools using statistical techniques **Dec 2023**

2. **"Predicting Customer Churn"** *– Team Project coded in R, Python, SAS*
   o Developed and compared several models to predict customer churn from data provided by Southern Company on customers in Ohio **Dec 2023**

3. **"Predicting Email Click"** *– Team Project Coded in R, Python*
   o Collaborated with a team to build, test, and compare several models that predict whether a member would click on an email **May 2023**

4. **"Modelling User Chatbot Experience"** *– Coded in R, Python*
   o Analyzed chatbot interactions using text analysis methods and libraries such as SpaCy, BERTopic, and SentenceTranformers **Dec 2022**

5. **"Using Logistic Regression to Build Credit Scores"** *– Coded in R, Python, SAS*
   o Created a logistic regression model in SAS using 1.2M records with over 300 attributes to predict whether a customer was considered a credit risk **May 2022**

Research & *Academic* *Interests*	**1. Statistical Theory, Data Analysis, and Analytical Storytelling** ○ Utilize interpretive data storytelling to communicate complex results ○ Enhance reliability of machine learning models and traditional statistical methods ○ Develop robust practices of automatically processing high-dimensional data ○ Ensure impact of recommendations by forging generalizable data storytelling devices ○ Foster interdisciplinary practices that streamline data extraction and preparation **2. Theoretical, Computational, and Applied Mathematics** ○ Improve analytical capabilities by applying core principles of group theory to enhance the process of information extraction ○ Utilize graph theory and network analysis techniques to demystify and interpret black box algorithms ○ Enhance data processing efficiency by employing combinatorial methods, linear algebra, and matrix analysis techniques to unravel and manage complex datasets ○ Design innovative educational tools and methods to simplify core mathematical concepts for undergraduate students, focusing on areas such as linear algebra, probability, and discrete mathematics ○ Investigate applications of matroid theory in dimensionality reduction, algorithmic fairness, and data fusion **3. Modeling Complex Systems, Machine Learning, and AI** ○ Enhance data utility in daily life by developing intuitive, human-centered AI solutions that streamline discovery and interpretation of complex information, focusing on experience and accessibility to facilitate decision-making and knowledge acquisition ○ Develop algorithms that enable AI to answer "what if" questions via causal inference ○ Improve efficiency, analytical power, and scalability of AI using machine learning, traditional statistical methods, quantum computing, and novel modeling techniques ○ Generate the audio and video content recommendations using generative AI ○ Deliver clear and accessible AI interpretations **4. Social Impact and Data Equity** ○ Improve reliability and fairness in AI and statistical practices by developing robust bias metrics, utilizing diverse and equitable datasets, and focusing on fair data practices ○ Utilize diverse datasets to derive transformative insights, emphasizing data equity. ○ Examine ethical implications of automated decision-making, focusing on social impact and data equity. ○ Champion the use of data science in advocating for underrepresented and marginalized communities. ○ Research adaptive learning algorithms to enhance statistical reliability and fairness in real-world social networks