

# Jake Byford

<https://jakebyford.github.io/portfolio/>

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*Analytical problem solver who seeks to interpret data to make decisions and answer questions while communicating findings effectively.*

## SUMMARY OF QUALIFICATIONS

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- 4 years' experience: Python, R, SQL, Tableau to create big data models
- 4 years' experience: Tutoring math, data analysis, data science
- M.S. Data Science; 4+ years' business, financial, and technical writing

## EDUCATION

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- **Master of Science, Data Science** | New Jersey Institute of Technology, Newark, NJ *Dec. 2023*
  - Magna Cum Laude, GPA: 3.75 (2023)
- **Bachelor of Science, Finance** | Kean University, Elizabeth, NJ *May 2020*
  - Dean's List (2018 - 2020)

## CERTIFICATIONS

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- **CompTIA Data+ Certification** *Jan. 2024*
- **Rutgers University Data Science Certification** *Nov. 2020*

## EXPERIENCE

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- **Data Science Teaching Assistant** | edX (University of Pennsylvania), Remote *May 2021 - Present*
  - **Classroom Leadership** : Led a class of 30 students in daily coding exercises, leading to weekly KPI's consistently exceeding 90% in terms of overall satisfaction, in contrast to 80% for my peers
  - **Tutoring** : Tutor students in the following subject areas - **Python, R, SQL, and Excel**.
  - **Company Growth** : Improved company code using **Git** and presented to management finding yielding a 5% increase from employee appraisal.

## PROJECTS

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- **NFL Betting Model**: Scraped, analyzed, and modeled NFL data using the ELO algorithm for prediction - tuning thresholds for a 9.56% increase in accurate bets - and using cross validation for classification seeing our cost functions decrease 7.62% and accuracy increase 4.18%
- **Nintendo Sales Analysis**: Rolled out a comprehensive 2023 sales report using **SQL, Pandas, and Python** to identify trends such as Nintendo published 37% of the top 50 best-selling video games ever sold worldwide
- **TD Ameritrade Investment App**: Built an automated **Python** program with **Pandas, BeautifulSoup, and Selenium** that scrapes companies' financial data and stores it inside a **SQL** database to perform analysis against competitors
- **Big Data Flight Analysis**: Used 4 **AWS EC2's** and **MySQL, Hadoop, and Oozie** integrated with **Java** to perform parallel computing (MapReduce jobs) across 11GB of flight data to reduce execution time from 850 seconds with 2 VM's to 478 seconds with 4 VM's
- **Starbucks Coffee Recommendation**: Deployed a **Python Flask app** with **Pandas and BeautifulSoup** to collect data in **MongoDB** and provide customer recommendations by way of the KNN algorithm, Cosine Similarity, and Collaborative/Content filtering techniques
- **School Registration App**: Final project for database management class with UI that incorporates **Java, MySQL, and PHP** allowing students to pick their classes

## TECHNICAL SKILLS

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- **SQL**: ETL, PostgreSQL, MySQL, API connection, Python integration, Star/Snowflake schema
- **Machine Learning**: Regression, Regularization, Cross Validation, Bayes, SVM, KNN, DTC
- **Programming**: Python ML & app development, R statistical packages/visualization
- **Excel Power User**: Formulas, pivot tables, dashboard development, VBA automation
- **Data Visualization**: D3.js, Leaflet, ggplot, Matplotlib, Plotly, Seaborn, Tableau