

# Joseph Davis

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## EXPERIENCE

### American Electric Power, Columbus, OH - *Data Scientist*

Spring 2020 - Current

- Automated daily zero rates and valuations of financial instruments with respect to the London Inter-Bank Offered Rate transition to Secured Overnight Financing Rate.
- Built a dockerized shiny application hosted on openshift that gives users the ability to simulate and analyze capacity risk on generation and electric load forecast.
- Developed Cox-ingress models to simulate treasury rates under different conditions.
- Analyzed gas storage unit for option valuation and energy market participation.
- Used machine learning methods segmented commercial and industrial customers with latent-class analysis, decision trees, and clustering.
- Used stochastic processes to monitor employee COVID infection rates to determine policy.
- Created python infrastructure to automate analytics and perform quality assurance checks.
- Wrote an internal R package for pulling and ETL of distribution relay data.
- Created a shiny application to monitor telecom readings and provide anomaly detection.

### Proctor and Gamble, Mason, OH - *Data and Modeling Science Contractor*

Fall 2019 – Spring 2020

- Updated internal shiny application that does quality control and LIMMA analysis on micro-array experiments.
- Helped perform compositional analysis using Bayesian methods.
- With non-linear models and non-parametric regression calculated half-maximal inhibitory concentrations and effective concentrations.

### American Electric Power, Columbus, OH - *Data Science Intern*

Summer 2019

- Analyzed energy production on panel data, testing for semi-quasi experimental effects.
- Automated software for analyzing payments on the SAS grid with SAS 9.4.

### Miami University, Oxford, OH - *Graduate Assistant*

Fall 2018 - Summer 2019

- Held recitations and labs for students to teach statistical procedures and use of statistical software.
- Created lessons and presentations to facilitate a conducive learning environment.

### The Ohio State University Department of Athletics , Columbus, OH - *Student Administrative Assistant*

Summer 2017 - Summer 2018

- Automated Excel workbooks to perform task and link to other sources of data via VBA.
- Built a regression model in Stata to properly explain the change in concession revenues upon a different policy initiative.
- Helped develop financial forecast reports looking into the sources of expenses and revenues.

## EDUCATION

### Miami University, Oxford, OH - *M.S in Statistics 2020*

GPA of 4.0

## **The Ohio State University, Columbus, OH - *B.S in Economics* 2018**

GPA of 4.0

### **AWARDS**

**SAS Innovate 2024 ROI Rockstar**

### **SKILLS**

#### **Statistics/Math/Economics**

- Studied regression, time-series, GLM, and longitudinal models to create models for analysis.
- Learned Bayesian methods, probability theory, and experimental design.
- Executed Machine learning projects for both supervised and unsupervised learning.
- Explored deep learning and TensorFlow courses and literature.
- Covered stochastic processes, spatial regression, nonparametric regression, and dimension reduction methods.
- Practiced financial mathematics covering stochastic calculus and Black–Scholes models.

#### **Technical skills**

R (tidyverse, rvest, shiny, rmarkdown, plotly, caret), SQL, Python (numpy, matplotlib, Keras, Scikit, SciPy, Pandas, TensorFlow), SAS, Java, VBA, Git, Docker, Kubernetes, Hadoop/Hive, ArcGIS