# MICHAEL ELLIS

Bentonville, Arkansas

Email: michaelellis003@gmail.com — Website: [www.mlellis.com](www.mlellis.com)

## PROFILE

- Experienced Data Scientist with a proven track record in deploying machine learning and statistical models to production to solve complex problems in industry.

- Skilled in **Python**, **C++**, **R**, **SQL**, **Git**, and **Google Cloud Platform (GCP)** with significant experience in natural language processing **(NLP)** and understanding **(NLU)**, **generative AI**, large language models **(LLMs)**, **time series analysis** and **forecasting**.

- Open source examples of my work, including full Bayesian inference for Gaussian process models, time series analysis and forecasting using dynamic linear models, and an R package for variational inference for Dirichlet process mixture models, can be found on my [GitHub](GitHub).

## EXPERIENCE

### Data Scientist, The Home Depot                                    May 2022 - Present
Remote - Bentonville, AR

- A member of The Home Depot's conversational AI team where we use NLP/NLU, generative AI, LLMs and other statistical and machine learning techniques to optimize The Home Depot's contact center experience.

### Data Scientist, Black Hills Energy                                    May 2018 - March 2020
Fayetteville, AR

- Directly responsible for building statistical and machine learning models to analyze, predict and quantify uncertainty of energy consumption, weather and climate, with the goal of helping senior business leaders to improve decision making.

- Designed model to produce forecasts of energy demand for 1.2M customers in 8 states improving accuracy by 14% using advanced time series methods.

- Partnered with NOAA to ingest over 2.2 billion weather data points to produce climate and weather models.

- Developed several R-Shiny web applications. Including an application to automatically calculate the optimal climate normal for each NOAA weather station in the Black Hills Energy's service territory.

## TEACHING

### Instructor for Principles of Statistics (STAT 2303)                        2021-2022, 2017-2018
University of Arkansas

- Course covering an introduction to probability theory, hypothesis testing and regression analysis. Taught 2 course sections of approximately 40 students each semester.

### Recitation Leader – Pre-Calculus (MATH 1284)                        2020-2021, 2016-2017
University of Arkansas

- Taught 3 course sections of approximately 30 students each semester.

**Student Course Evaluations**

- "Michael is a great teacher who cares about his students and always tries to help. He thoroughly enjoys stats and helps you apply it to the real world."

- "Michael is very good at making difficult things understandable and he's also very concerned with how everyone is doing, which is awesome!"

## EDUCATION

**Mathematics PhD coursework** (incomplete)        August 2020 – May 2022
University of Arkansas – Fayetteville

- **Relevant Coursework:** Theory of Probability (measure theory based), Mathematical Statistics, Experimental Design, Theory of Functions of a Real Variable, Partial Differential Equations.

- **Research Focus:** Bayesian statistical methods, time series analysis and forecasting, scalable Bayesian computational methods.

**Master of Science, Statistics**        May 2018
University of Arkansas – Fayetteville

- **Thesis:** *Sequential Inference for Hidden Markov Models*

**Bachelor of Science, Mathematics**        May 2016
University of Arkansas – Fayetteville