Bridget Clark, Mia Kwiatkoski, Mridula Geddam, Sienna Ifill
Marquette University
MATH 3570: Introduction to Data Science
Dr. Cheng-Han Yu

Do You Believe in Magick?

The goal of this project is to introduce the magick package within R and to demonstrate its applications for images and data visualization. Focusing on specific arguments, functions, and structures, we will compare it to both the base R and previously used packages to identify the advantages of magick. Specific examples, such as graphs using ggplot2 and then further enhanced by magick will be presented to highlight superiority. We will implement an interactive activity to engage our classmates, enhancing their understanding of this package. The reasoning behind how this tool benefits data science and data visualization will be clearly explained. By the end of our presentation, we will have convinced our classmates that magick not only can improve the outputs of other packages, but also perform a greater variety of functions.

We will be using the Lahmann R package for its data sets, including Batting, a large data set that includes observations from 1871 to 2023. One example of how we will be using Lahmann's data and magick is a graph utilizing the Batting data that shows the homerun records per year. Although the underlying data is conveyed through ggplot, we made a gif that adds information to the graph in decade-long segments, enabling viewers to clearly see the evolving trends. We are also working on using the Teams data to make a gif of bar plots showing how many wins each team had per year over a decade. While this information could be portrayed across several ggplots, magick's ability to turn the data into a single gif is much more effective at showing the data in a concise manner. We will also be using various images to supplement the theme of our presentation. We will edit these images using magick to show what the package can do and explain why it is beneficial for data science. For example, we might create a logo to edit for our team (Ctrl+Alt+Elite), develop a gif of all baseball teams' logos, or code funny memes on the spot with input from our classmates. The data, images, and examples will all support our goal to promote the magick package.