I used ChatGPT for this project, as well as non-AI technology (mostly the help files in R itself), to help with code. I used ChatGPT to troubleshoot code for the visualizations when I either got error messages or my code was not doing what I wanted it to do. Overall, ChatGPT was pretty useful, but there were definitely several points where it could not help resolve error messages. Here is an example of how I used it.

Hi ChatGPT, I am trying to save a looping image. Below is my code for the graph and trying to save it. Can you help me troubleshoot this?

# Change in CRP Acres and HPI Over Time

static\_plot <- ggplot(

clean\_data,

aes(x = ACRES,

y = HPI\_base\_2000,

size = 0.1,

colour = STATE)

) +

geom\_point(show.legend = FALSE,

size = 0.1) +

scale\_color\_viridis\_d() +

scale\_size(range = c(2, 12)) +

scale\_x\_continuous(

labels = scales::number\_format(scale = 1e-3, accuracy = 1)

) +

scale\_y\_continuous(

labels = scales::dollar\_format(accuracy = 1)

) +

labs(x = "Conservation Easement Acres in 1,000s",

y = "Housing Price Index (Base Year 2000)",

title = "Change in HPI and CRP Acres in the U.S. from 1986-2022",

subtitle = "Year: {frame\_time}") +

theme(plot.title = element\_text(hjust = 0.5))

static\_plot

finding\_3\_HPI\_ACRES\_changing\_over\_time <- static\_plot + transition\_time(as.integer(YEAR))

# Save plot

print(finding\_3\_HPI\_ACRES\_changing\_over\_time)

ggsave("C:/Users/s75j325/OneDrive - Montana State University/Holly - Personal/School Files/ECNS 560 - Advanced Data Analytics in Economics/Final Project Files/Graphs/finding\_3\_HPI\_ACRES\_changing\_over\_time.gif", finding\_3\_HPI\_ACRES\_changing\_over\_time, width = 12, height = 6, units = "in")

ChatGPT Answer:

To save a gganimate looping GIF, you'll want to use the **anim\_save()** function from the **gganimate** package instead of **ggsave()**. Here's how you can modify your code: … Make sure you have the **gganimate** package installed (**install.packages("gganimate")**) if you haven't already. Adjust the file path and filename as needed.