# simhelpers

Megha Joshi

2020/03/16

# Motivation

- I wanted to do a blog post initially going through steps of running a simulation study. But there was a lot of information I wanted to cover.
- Also, when TA-ing the R class I had to write up the solutions of MCSE and was wondering if there was a package out there that I could use to double check my answers.
- And, during winter break I was under a lot of stress and needed some coping mechanism and this was it. 😄
- Lastly, I was looking at websites of `dplyr`, `purrr`, and all and I wanted to make one. I asked James if he wanted me to try making one for `clubSandwich` and the response was iffy. So I decided to make my own package. 😄

# Making the Package

- I followed Hadley's book on making packages: http://r-pkgs.had.co.nz/
- R code and documentation, datasets, vignettes
- Runing checks
- Travis CI
- Testing
- For the website, I followed the materials on the website for `pkgdown`: https://pkgdown.r-lib.org/

# Difficulties

- The `pkgdown` manual has functions that are now part of `usethis` but the manual says they are part of `devtools`.
- Issues with deployment in GitHub Pages: html pages not uploading to online repository, jekyll conflict because of curly braces.
- Issues with new version of `dplyr` 0.8.5. Had to reinstall `vctrs`.
- What I learned: ask for help in R studio community, `dplyr` and `pkgdown` issues pages in GitHub, GitHub support. Ask your question thoroughly with replicable examples.
- Getting over "I am never going to fix this" attitude and asking for help. 😄

# Difficulties Part 2

- I changed names of functions, parameters frequently. 😄
- So, I needed to make sure documentation, vignette write-ups are all consistent.
- I am still editing. 😄
- I changed the name of the whole package half way through. That was fun. 😄

# Considerations

- It takes a lot of time!
- Feedback is very helpful. I don't know everything.
- Check and edit frequently.
- Spend time writing vignettes that are readable 😄 If people understand the intricacies of your package, they will more likely use it.

# simhelpers

https://meghapsimatrix.github.io/simhelpers/index.html

- This package provides a set of functions that calculates various performance measures like bias, root mean squared error, rejection rates, and also calculates the associated Monte Carlo standard errors (MCSE).
- In addition to the set of functions that calculates performance measures and MCSE, the package also includes a function, create_skeleton(), that generates a skeleton outline of a simulation study that can be applied when designing and conducting one.
- Another function, evaluate_by_row(), runs the simulation for each combination of conditions row by row and implements the future_pmap() function from the furrr package to run the simulation in parallel. The package also contains several datasets that contain results from example simulation studies.

# Thanks!