Final Project - due 12-15 (presentations 12-2 and 12-4)

Goal. Utilize skills learned in this course to improve a statistical algorithm (ideally related to your research). For example, you could:

- Make your own software easier to run and share
- Contribute meaningful improvements to open-source statistical software
- Create tools for statistical computing

Email me if you're not sure whether your project idea is a good fit.

In-class Presentation (Week of 12-2)

You will give a **5-minute presentation + 1 minute of questions**.

Your presentation should briefly cover:

1. **Motivation**
   - What statistical computing problem or need are you addressing?
   - Why is it important for your research or for others?
2. **Approach**
   - What techniques, tools, or principles from the course are you applying?
   - What is the structure of your solution?
3. **Progress + Results / Plans**
   - What have you accomplished so far?
   - What remains? What do you expect the final outcome to look like?

You do *not* need to be finished by this point. The goal is to communicate what you're doing and why.

Submission Requirements (Due 12-15)

Your submission includes three components:

1. **Repository URL** or **zip-file** linking source-code
   Your repository/codebase should include:
   - Clear installation or usage instructions (e.g., `README.md`)
   - Any necessary environment files (e.g., `requirements.txt`)
   - Example scripts or notebooks showing how to run your demo
2. **report-LASTNAME.pdf** (1-3 pages)
   a. Motivation
   - What problem were you trying to solve? Why does it matter?
   - Who might benefit from your solution (your research group? the broader community?)
   b. Project Description
   - What exactly did you build/modify/analyze? How does it work?
   - Which course concepts/tools/techniques did you use?
   c. Results or Demonstration
   - Show what your tool/algorithm/code does
   - Include figures, tables, or short code snippets if useful
   d. Lessons Learned
   - What challenges you encountered
   - How your approach or code changed because of the course
3. **Demo File / Example**
   Include a self-contained example illustrating your project—a notebook, script, or mini-workflow that:
   - Can be run in under 30 minutes by someone else following your instructions
   - Demonstrates the main functionality or improvement
   - Requires minimal external setup