

Data Science for AAE

AAE 718 – Summer 2025

Project 03

Climate Data

Due: Monday, June 9

1 Portfolio

For this project you will be creating a portfolio project on your GitHub account. You should name your repo something like “Climate_Data_Project”¹, or more specific depending on your topic. Include in your repo the following files:

- **.gitignore** Have this be the standard .gitignore file for Python. Add *.pdf to the gitignore to ignore any generated PDF files.
- **README.md** This should include a description of your project, how to run it, and any other information you think is important.
- **report.md** A markdown file that contains your report, you will be writing this report in markdown.
- The graphs you’ve made in a directory called **images**²
- Any data files you need, preferably in **csv** format. GitHub has a limit on file size, if your CSV files are too large add *.csv to your gitignore and include a link to the data files in your README. You can upload the data files anywhere, like Google Drive or Dropbox. Just be sure to set the permissions so anyone with the link can view them.

Feel free to include the Project Description of this project in your README file. It would help provide context for future viewers.

2 Submission

You are only going to submit the PDF of your report to Canvas. Include in your report a link to your GitHub repo. If you decide to keep your repo private³, add me as a collaborator. My GitHub username is mitchphillipson.

3 Project Description

We will be using the [climate data](#) from a previous worksheet for this project. This is a world wide data set, so you can more than likely find data from your home region.

Here are the data requirements:

- You need data from at least 4 weather stations
- You need at least 10 years of data from each station

Your goal is to ask and answer an interesting question using the data. I want a written report that provides motivation for your question, graphs that help analyze your question, and written analysis. The style should be that of a research paper, although you can be far less rigorous.

I’m not a fan of page requirements as it’s easy to fill space with BS and I’d rather not have to read that. However, 3-5 pages with graphs feels like the right length. This is not a requirement, more of a suggestion.

¹You can’t have spaces in repo names. Underscores are used instead.

²Or **graphs** if you prefer, the name isn’t important but you don’t want them in the root, or base, directory

³It’s your choice if it’s private or public, but the purpose of a portfolio is for people to see it.

As an example, here is what I would do for the project. I grew up about three hours north of Madison in a city called Eau Claire. I distinctly remember as a little kid the winters had far more snow than they do now.

I would grab the past 30 years of data in the area surrounding Eau Claire and explore daily snow depths in the winter months. I may included snow fall data and temperature data to determine if it's snowing less or just melting faster.