

Applications of Data Science Exercises (8/4/23)

Exercise 1

Brainstorm data science problems that are not prediction tasks.

Exercise 2

Think of optimization problems in your daily life.

Exercise 3

Imagine you work for a rideshare company, and you want to match drivers to passengers. Try to brainstorm the following for this optimization problem:

1. The objective function (what do you want to maximize or minimize?)
2. The constraints
3. The decision variables

Exercise 4

What do you use these models for? What aren't they good for?

Exercise 5

What ethical issues are raised by these generative models?

Exercise 6

Brainstorm additional applications of generative AI.

Breakout Room

Introductions: Brief introduction (~1 minute) from each participant

Idea sharing: Each participant shares an idea for a data science application they have thought of

Idea refinement: Choose one idea to share with the full class. Create a single slide (using PowerPoint or Google Slides) that describes the idea:

1. What is the problem you are trying to solve?
2. What data will you use to solve this problem?
3. Are there any ethical considerations?
4. Other details?

Upload your slide to the Piazza thread "Breakout Rooms."

If you finish early: What ethical issues in the realm of data science most concern you? Why?