MACHINE LEARNING

CRITIQUE

Participant ID _____

You learned about linear models. What are some other scenarios you would apply a linear model like that? **List as many as you can.**

*ex. **predicting:** construction cost, **features:** time, materials, weather*

1. *predicting:* _____, *features:* _____

2. *predicting:* _____, *features:* _____

3. *predicting:* _____, *features:* _____

4. *predicting:* _____, *features:* _____

5. *predicting:* _____, *features:* _____

6. *predicting:* _____, *features:* _____

7. *predicting:* _____, *features:* _____

8. *predicting:* _____, *features:* _____

9. *predicting:* _____, *features:* _____

10. *predicting:* _____, *features:* _____

11. *predicting:* _____, *features:* _____

12. *predicting:* _____, *features:* _____

13. *predicting:* _____, *features:* _____

14. *predicting:* _____, *features:* _____

15. *predicting:* _____, *features:* _____

Choose 3 of the models you came up with, and write some pros and cons about them.

Predicting:

Features:

PROS   CONS

Predicting:

Features:

PROS   CONS

Predicting:

Features:

PROS   CONS

Next, you'll be asked to critique some machine learning models. This means providing some criticism of the model, about what information it uses and how it might be used in the world; identifying potential problems with what information it takes into account, or how it uses that information to make predictions.

Now you're going to critique some models similar to the linear regression model you learned about.

1. **For each scenario, write as many critiques of the model that you can think of.**
2. **Next, write a letter demonstrating how you might advocate for yourself as a stakeholder in this scenario (someone being affected by the model). Imagine you are making your case to the creator of the model, or someone enforcing its results. Try to use what you learned from the tutorial as much as possible in your argument.**

SCENARIO 1: INTEREST LEVEL AND GRADES

The instructor of a college course uses a model to identify which students might need extra support and help throughout the quarter. The instructor uses the linear model that you saw in the tutorial. At the beginning of the course, the instructor collects everyone's **interest level**, and makes a prediction for their **grade**, based on last year's Interest-to-Grade data. If the model predicts a grade lower than a 75, the instructor will intervene and offer extra help, and may curve the exam grades to help these students. So, if a student who rates their interest at a 2 tends to score below a 75, the instructor will intervene with a new student who rates their interest at a 2.

List as many critiques of this model as you can (and number them!) Try to use what you learned in the tutorial to make your case.

List your critiques here:

Next, write a convincing argument of how you might advocate for yourself as a student in this scenario (someone being affected by the model). Imagine you are making your case to the instructor, or someone else enforcing the results of the model. Try to use what you learned from the tutorial as much as possible in your argument. Write a short answer response for how you would advocate for yourself if the model made a wrong prediction. Try to use what you learned in the tutorial to make your case.

Write your argument in the space below:

SCENARIO 2: SIBLINGS AND FINANCIAL AID

The financial aid office has to make tons of decisions in order to give out aid. Usually, they offer an amount and won't change it unless a family "appeals" the process because it is not enough. They try to predict how much aid they should give as accurately as they can, so that they offer an amount that a family won't appeal. They use a model that uses the **number of siblings** that a student has to predict **how much money** their family will need. They use last year's data, looking at families who were "happy" (did not appeal) with the offer the office gave. So, if families with 3 children tend to need $20,000 in aid, that's what the office will budget for a new family with 3 children.

List as many critiques of this model as you can (and number them!) Try to use what you learned in the tutorial to make your case.

List your critiques here:

Next, write a convincing argument of how you might advocate for yourself as a student or family in this scenario (someone being affected by the model). Imagine you are making your case to the financial aid office, or someone else enforcing the results of the model. Try to use what you learned from the tutorial as much as possible in your argument. Write a short answer response for how you would advocate for yourself if the model made a wrong prediction. Try to use what you learned in the tutorial to make your case.

Write your argument in the space below: