

HW4 Proposal

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$$\tilde{Y} + \mathbb{E}(\tilde{Y})$$

1. Understanding the Problem

Background:

Goals:

In this analysis, we want to address several key questions:

i. Is there evidence of diminishing returns on extracurricular activities in terms of student learning?

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ii. Is English as a second language a barrier to student learning?

iii. In your opinion and based on the data, what can be done to increase student learning?

iv. How well does the model predict compared to alternatives?

2. Exploratory Data Analysis

3. Desired Attributes

Model attributes required from the research questions

Model attributes required from the data

Any other anticipated problems

What goes wrong if the above are not accounted for?

4. Proposed Method

Appropriate models

Specific model proposal

Method strengths/weakness

i. How this method accounts for issues in the dataset

ii. How this method accomplishes research/analysis goals and yields appropriate estimators

iii. How this method will answer the research questions

iv. What assumptions are needed to use the model adequately? Are they reasonable to assume and explained well?