Module 12: Logistic Regression 2

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- Remind me to record the live session!
- Recommended: put yourself on mute unless you want to speak.
- Reminder: the raise hand button can be found under "Manage Participants".

Agenda

- Q & A
- Small group discussion
- Large group discussion
- Test error in linear regression
- End of semester logistics...

Q&A

Instead of using error rate, use **mean squared error (MSE)** in linear regression with quantitative response:

$$\frac{\sum_{i=1}^{n}(y_i - \hat{y}_i)^2}{n}. \tag{1}$$

Interpreted as average squared difference between response and its prediction; or average squared prediction error.

Test Error in Linear Regression

Use on the test data.

- Use predict() function on test data to obtain vector of $\hat{y}_i$s.
- Subtract vector of $\hat{y}_i$s from vector of ys of test data, square these differences, then find the average.

Test Error in Linear Regression

While MSE is popular, its unit is the squared of the unit of the response variable.

- Can be difficult to judge if value of MSE is reasonable or not.
- Some advocate using the **root mean squared error (RMSE)**, which is just the square root of MSE, since its unit is the same as the response variable.
- Judgment made in relation to values of the response variable.
- Interpreted as approximately the standard deviation of the prediction error.

Assignments

- Exam, due Sunday Apr 28. Opens today 9:30pm. See more info in "Module" for Exam (below Project 2). Covers modules 3 to 10.
- HW 12, due Monday Apr 29.
- Group Evals for Mods 9 to 12 discussions, due Monday Apr 29, via Qualtrics (link on Canvas with HW pdf).
- Project 2:
    - Part 3 (report), due Wednesday May 8. One upload per group.
    - Parts 4 (group eval), due Thursday May 9. Everyone completes.

Office Hours

Thursday Apr 25 and Monday Apr 29 as usual.

- Tuesday, Apr 30, 9:30 to 9:30pm
- Thursday, May 2, 7 to 8pm.
- Monday, May 6, 7 to 8pm.
- Tuesday, May 7, 7 to 8pm

Apr 30 onwards will be Project 2 consultations. Sign up for 15-minute consultation for your group. Details on Canvas home page.