

AI Assisted Fair and Efficient Grading in the Statistics and Data Science Classrooms

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bit.ly/eCOTS2020

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About Me

- I taught a semester-long course on assessment to pre-service teachers.
- I taught at a college with no letter grades.

About You

- Is this your first eCOTS?
- Have you ever taught/graded more than 50 students?
- Have you ever used AI to grade?

Goal of the talk

- To provide tips on fair and efficient grading.
- To introduce AI assisted grading with Gradescope.
- To provide tips for those who are interested in using Gradescope.

During this this talk

Grading = Providing Feedback

Higher score is the desired outcome

LMS = Learning Management System

FALL

Intro Prob &
Stats for CS
(98)

Intro Prob &
Stats for CS
(81)

WINTER

Bayesian
(33)

SPRING

Basic
Statistics
(223)

Methods for
DA III
(65)

Fair and Efficient Grading Tips

- Skim over answers before starting grading.
- Take break(s) while grading to avoid rater drift.
- Do not take too long of a break (e.g. a week) or you will forget some of the decisions you made.
- Blind grading.
- Grade question by question rather than going over each student's assignment at once.
- Type feedback when possible.
- When grading as a team, assign each team member specific questions rather than assigning students.



Section 1

Section 2

- Q1
- Q2
- Q3
- Q4
- Q5
- Q6

- Q1
- Q2
- Q3
- Q4
- Q5
- Q6



Section 1

Section 2

Q1
Q2
Q3



Section 1

Section 2

Q4
Q5
Q6

About Gradescope

The cofounders were teaching an Artificial Intelligence course at UC Berkeley.

Note:

None of the students' responses shown during this talk are from real students. The handwriting is mine.

...

*Bayes Rules! An
Introduction to Bayesian
Modeling with R.*

The exercises in this talk will be mainly from this book (currently in preparation).
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BCE (Before Corona Era)

Problems on paper
.Rmd assignments
Online assignments


CE (Corona Era)

Online assignments


Create Assignment




ASSIGNMENT TYPES

 Exam / Quiz

 Homework / Problem Set

 Bubble Sheet

 Programming Assignment

 Online Assignment **BETA**



Select an Assignment Type

Gradescope supports a variety of paper-based, online, and code assignments. Click on one to learn more.

Cancel

Next

Live Demo

Features that we have seen in Live Demo

- Image recognition
- Grouping
- LaTeX support for rubric
- Grading shortcuts
- Blind grading
- Providing feedback with text directly on student's work.

Programming Assignment

- Runs in a Docker container
- Needs a setup script file
- Needs an autograder file
- [Autograder for programming assignments documentation](#)
- [R autograder example for programming assignments](#)

ACTIVE ASSIGNMENTS	RELEASED	DUE (PDT) ▼	SUBMISSIONS	% GRADED	PUBLISHED	REGRADES
quiz-07d-lme-r	MAY 11	MAY 14 AT 2:00PM	4	100%	<input type="radio"/>	ON
quiz-07c-lme	MAY 11	MAY 14 AT 2:00PM	5	100%	<input type="radio"/>	ON
midterm	MAY 01	MAY 08 AT 5:00PM	65	50%	<input type="radio"/>	ON
hw-04-glm-gls	APR 24	MAY 01 AT 5:00PM	66	100%	<input checked="" type="checkbox"/>	ON
hw-03-linear-models	APR 17	APR 25 AT 8:00AM	66	100%	<input checked="" type="checkbox"/>	ON

Tips:

Use a style guide to name your assignments.

Name your assignments consistently between Gradescope and LMS

Entry code:

68 students


1 Instructor

1 TA

1 reader

 Download Roster

 Sync Canvas Roster

 Send Enrollment Notification

Add Students or Staff +

Tips: Add a second (personal) email as a student.
Remind students to use their institutional email address.

Additional Tips Working with Gradescope

Uploaded files have to be pdf and not html for exams and homework assignments.

If the assignment has certain section that is graded with a separate rubric (e.g. Introduction, Methods, Results etc.) then page breaks should be used by students appropriately.

If certain items are connected to each other (e.g. Q1a, Q1b etc..) then it is better if they are not separated over separate pages.

Students with Disabilities

For timed online assignments, specific students can get longer time periods.

[Style accessible with screen readers.](#)

Student A to Student B

“I got 2 points lower but I gave the exact same answer.”

Less likely to happen when using Gradescope.

You can have “on-paper” assignments without having to deal with problems that come with it (carrying it, giving it to the readers etc.)

You can change scores half-way through grading or after finishing grading.

Other Useful Gradescope Features

- Cell phone upload.
- Positive/Negative grading
- Markdown and LaTeX support for online assessments
- Group submission
- Regrade requests
- LMS synchronization
- Exam versioning
- help@gradescope.com

What I do not like about Gradescope

- Additional tool and interface for students to learn.
- The priority of the company is computer science instructors.
- No reminders sent to students about deadlines.
- No grading rules (e.g. if assignment is more than half correct then assign full points).

Additional Resources

- [Getting started with Gradescope](#)
- [Gradescope Roadmap](#)

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QUESTIONS?