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

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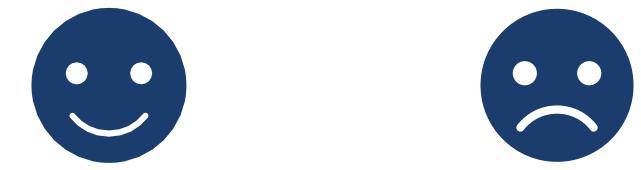
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About Me

- 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

WINTER

SPRING

Intro Prob & Stats for CS (98)

Bayesian (33)

Basic Statistics (223)

Intro Prob & Stats for CS (81)

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

Section 1

Section 2

Q1 Q2 Q3

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). Copyright ©Alicia Johnson, Miles Ott, Mine Dogucu. All Rights Reserved.

BCE (Before Corona Era)

CE (Corona Era)

Problems on paper .Rmd assignments Online assignments

Online assignments

Create Assignment



ASSIGNMENT TYPES

- Exam / Quiz
- Homework / Problem Set
- A 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

◆ ACTIVE ASSIGNMENTS	RELEASED	DUE (PDT) ▼	\$ SUBMISSIONS	% GRADED \$	PUBLISHED	REGRADES	
quiz-07d-lme-r	MAY 11	MAY 14 AT 2:00PM	4	100%	\bigcirc	ON	1
quiz-07c-lme	MAY 11	MAY 14 AT 2:00PM	5	100%	\circ	ON	:
midterm	MAY 01	MAY 08 AT 5:00PM	65	50%	\bigcirc	ON	:
hw-04-glm-gls	APR 24	MAY 01 AT 5:00PM	66	100%		ON	:
hw-03-linear-models	APR 17	APR 25 AT 8:00AM	66	100%		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.

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.

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 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
- Autograder for programming assignments documentation
- R autograder example for programming assignments

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QUESTIONS?