### Lecture 12: Ensembles CPSC 330

## Announcements

- Midterm 1
- How was it?
- HW4 grading is almost done. The grades will be released later this week.
- HW5 is an open-ended project-type homework. Please ensure to start early.



# iClicker Exercise 12.0

iClicker cloud join link: https://join.iclicker.com/VYFJ

Which of the following scenarios has worked effectively for you in the past?

a. Working independently on a project/assignment.

• b. Working with like-minded people.

c. Teaming up with a diverse group offering varied perspectives and skills.



#### Camputo

## Ensembles

- Key idea: Combine multiple trees to build stronger models.
- These kinds of models are extremely popular in industry and machine learning competitions.
- We are going to cover how to use a few popular tree-based models:
- Random forests
- Gradient boosted trees (very high level)
- We will also talk about two common ways to combine different models:
- Averaging
- Stacking



# Ensembles class demo