CS 189
Introduction

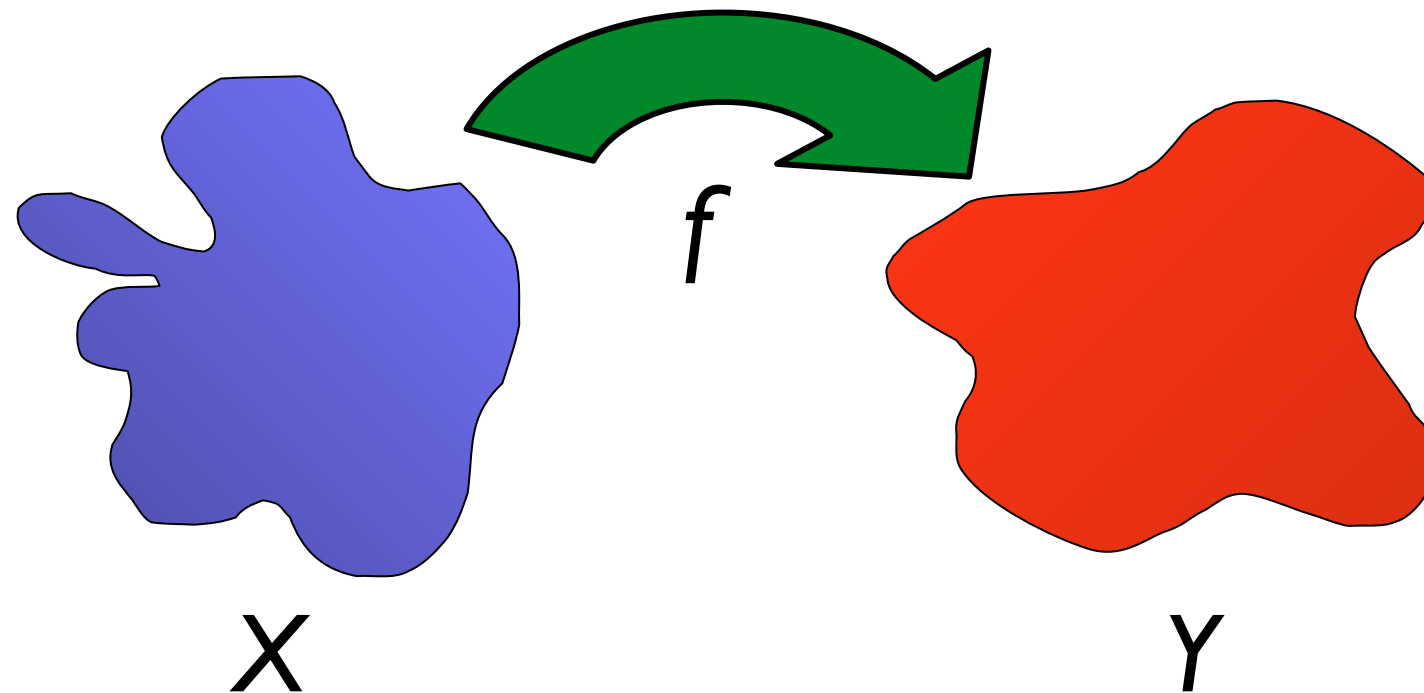**Instructors:**
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What is machine learning?

the study of *prediction* from *examples*

X f Y

Estimate $y=f(x)$ from observations
$(x_1,y_1), (x_2,y_2), \ldots, (x_N,y_N)$

Hope that this also works on new examples.

What is machine learning?

the study of *prediction* from *examples*

user history	→ recommendation
email	→ spam detection
lab tests	→ cancer diagnosis
image	→ scene description
English sentence	→ Korean sentence
lidar	→ driving plan

Machine Learning is Unavoidable

Spam filters, ranking, image recognition, translation, newsfeed ranking, knowledge organization

Mobile first to AI first

AI is one of the most important things humanity is working on. It is more profound than, I dunno, electricity or fire.

Artificial Intelligence

In the next five to 10 years, AI is going to deliver so many improvements in the quality of our lives.
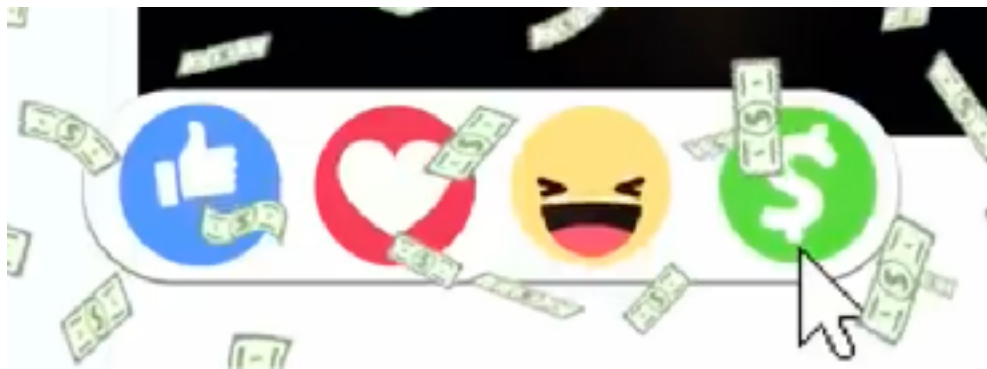
How do we ensure that our models are **reliable** and **safe**?

Machine Learning is Dangerous
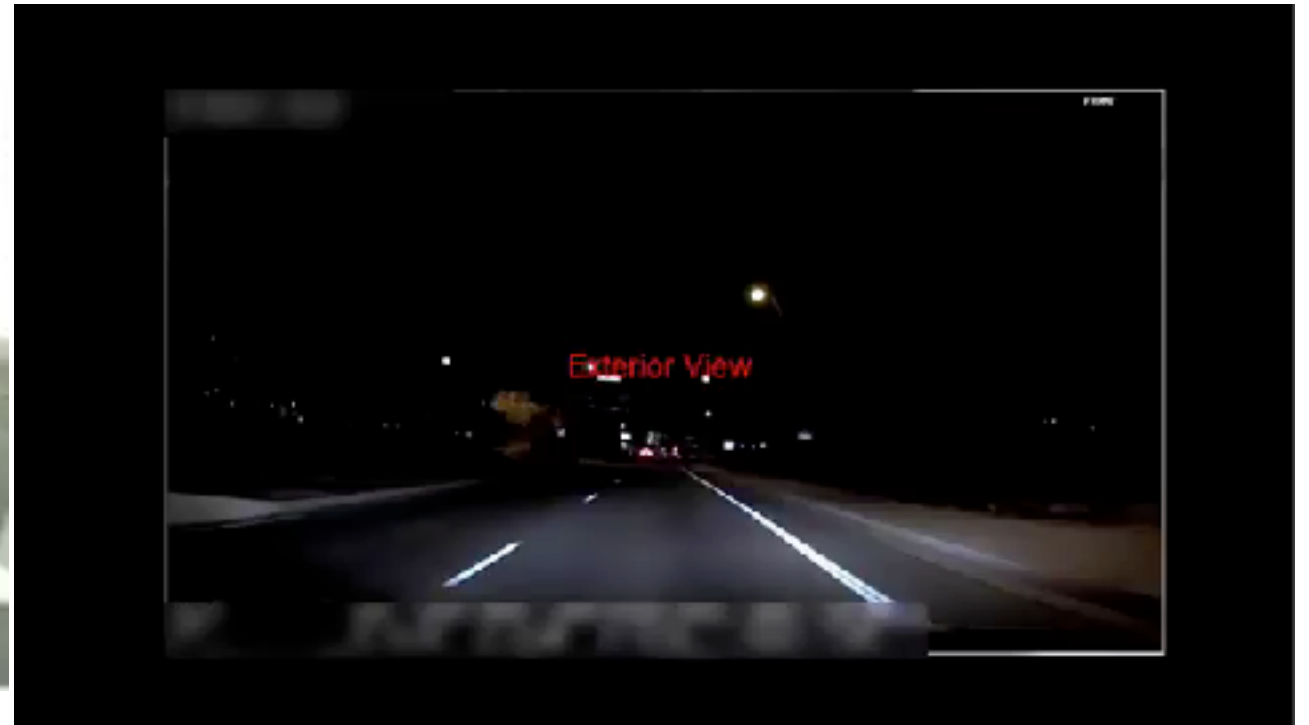
Machine Learning is Dangerous

Machine Learning is Dangerous

Machine Learning is Powerful

Machine Learning is Dangerous

With great power comes great responsibility.

How do we engineer systems that can learn from data, but are reliable and safe?

This class is not for you if…

Your primary goal learning how to import tensorflow so you can get a job at Amazon, Facebook, or Google.

You want to learn a bag of tricks to win Kaggle competitions or video games.

You not feel comfortable with concepts of linear algebra and probability at the level of EE126 and EE127.