

CS5841/EE5841 Machine Learning

Lecture 0: ML Terminology

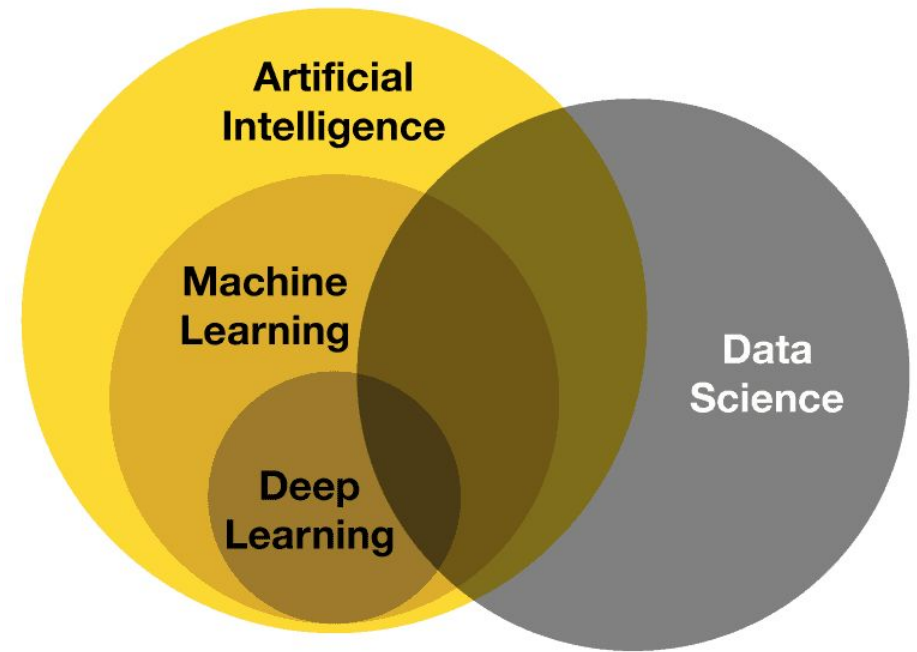
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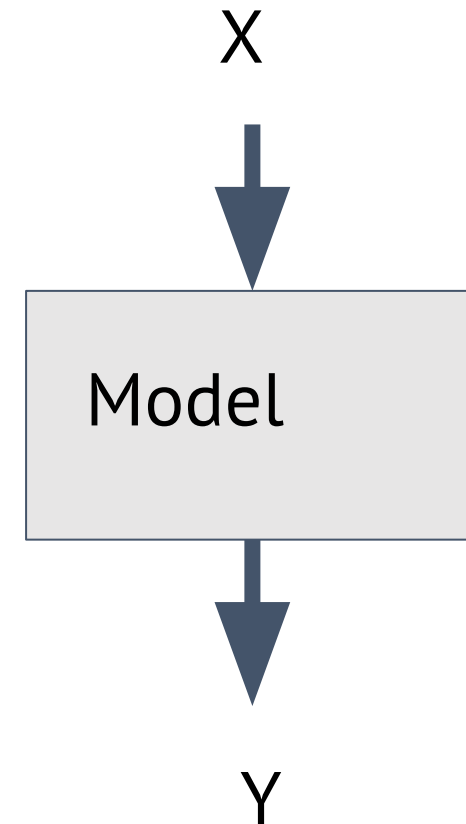
AI/ML/DL/DS

- Machine Learning (ML) is a deeply interdisciplinary field
 - Borrows ideas from all over, and each area uses its own taxonomy

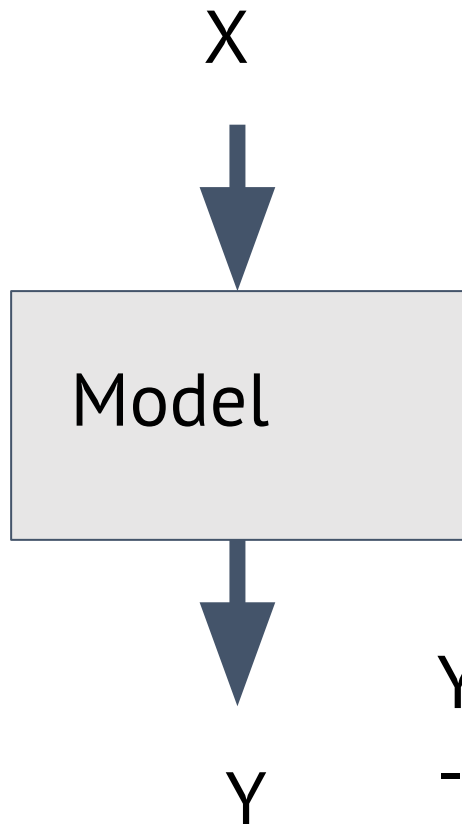


The basic problem

- Create a model that performs a task by learning from data
 - Data: usually specified as:
 - X: some data we can get when we are going to use the model (sometimes called 'test time')
 - Y: some outcome that we want from the model, usually not something we can get at the time we will use the model



The many terms we use



X the input can be described as features

The model has weights, which describe how it manipulates X to predict Y

Y the output is either the true label (y_i) or a predicted label (\hat{y}_i - “y hat”) for a classification problem. For regression, it’s a true value or a predicted value.

Data that we collect can be called observations.

This can apply to X or Y, but not unseen Y such as in test data.



Observations

- Data is not reality
- $y = h^*x + \text{noise}$
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