What is Machine Learning?

Machine learning is a method of data analysis that automates analytical model building

Using algorithms that *iteratively* learn from data, machine learning allows computers to find hidden insights *without being explicitly programmed where to look*

What is it used for?

- Fraud detection

- Pricing models

- Real time ads

- Predicting customer churn

- Financial modeling

- Recommendation engines

The Process

- Data acquisition

- Data pre-processing

- Model building & training

- Model testing

- Model deployment

Supervised vs. Unsupervised

Supervised Learning:

- Algorithms are trained using examples where the desired output is known

- Example: set of tests labelled "Fail" or "Success"

Unsupervised Learning:

- Algorithms train against data that has no historical labels

- The algorithm must figure out what is being shown by exploring data structure

Supervised Learning

Through methods like classification, regression, prediction, and gradient boosting, *supervised learning* uses patterns to predict the values of the label on additional unlabeled data or... "New Data"

Ie. *Use historical data to predict future events*