Week 1 Reflection

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3 Lessons and 1 Business Use case

1. Explanation of what ML is and how it works (still not clear to me)

Moving into the predictive analytics part, what made me understand ML a little better was the explanation that a visualization is a way for people to find patterns in data (our brains are really good at that). However, if we want the computer to find patterns in the data, visualization is not the best way to go because for a computer it is all just zeros and ones. What we need to do is fit an ML model to our data based on the data specifics and the task at hand. Then, we feed the model with clean, preprocessed data (a training dataset). Once we are satisfied with the model's performance, we can move on to testing.

2. Classical Machine Learning and its three main types

NOTE: We will not be learning about neural nets and deep learning in this class as they are mostly used for unstructured data, and we usually work with structured data in business metrics.

Supervised learning

Data is provided beforehand; this ML has time to train on a training dataset and it learns the relationships between inputs and outputs. Then, we use it for the new, unseen dataset once it is trained.

Unsupervised learning

No data beforehand is provided to the ML, the goal is to learn the underlying structure of the data without being given specific output variables to predict. The model learns on its own.

Reinforcement learning

This type of ML uses rewards and penalties to navigate the ML in its environment. It is similar to playing a game where we learn by ourselves what to do and what not to do based on our results (rewarded or punished).

3. Regression vs Classification problems

Regression problems in ML are trying to predict a continuous value while classification problems are trying to predict a categorical value. Continuous variables are numeric variables (weight, height, and anything measured on a scale). Categorical variables are discrete variables that can take one of a limited number of variables.

4. Business use cases after week 1

This week’s lesson helped me to learn what machine learning is used for and whether we can use it in my company to generate more value and I do not have to completely depend on other, outside people’s opinion and I am more ready to talk about ML and it is more difficult to fool me with technical terms about supervised learning.

Last semester, we used supervised learning to segment customers and that is one of the specific use cases that I remember.