# Lecture\_2a

Hello and welcome to the first lecture in this week. We are going to be looking at applying supervised learning. In this video, we will discuss when to use supervised learning.

Supervised learning techniques. Selecting a suitable algorithm. Primarily supervised learning algorithms employ a known set of input data, also referred to as the training dataset and known responses to the input data that is the output to build and train models that yield reasonably accurate predictions for the response to new input data. As a rule of thumb, you need to remember when there is existing data for the output to be predicted, then supervised learning is to be used. Some common use cases for supervised learning in management, including but are not limited to marketing and sales, the team's digital marketing and online driven sales. Customer lifetime value estimation that is tracking and documenting customers purchase behaviour to make predictions for targeting sales. Sentiment analysis, which enhances B to C models by aggregating and yielding analytics on customer feedback. Again supervised learning techniques are a form of classification or regression. For classification techniques we are mainly interested in predicting discrete responses. For example, credit scoring into poor Fair, good and excellent categories. On classification models are built and trained to classify data into categories of groups or classes or even labels.

Regression techniques on the other hand had used to predict continuous responses. This could be changes in environmental conditions such as temperature levels. The most suitable supervised learning algorithm for a particular use case, because supervised learning algorithms tend to be application specific, will offer a trade off between the following characteristics. The training speed, the memory usage the predictive accuracy of the algorithm that is considering its responses to new data. Transparency or interpretability which is understanding the rationale behind algorithms predictions. So please bear this in mind. There are many supervised machine learning algorithms and selecting the most suitable one for a specific application can be challenging, mainly because each algorithm often takes a unique approach to learning and there is no one size fits all approach. And finding the right algorithm, even for experienced data analysts or scientists will always involve a bit of trial and error. One rule of thumb to remember is this, using larger training datasets for supervised learning often yields models that generalise suitably and accurately well for new data. In this video we've discussed briefly when to use supervised learning The broad categories of supervised learning techniques that is classification techniques and regression techniques. and selecting a suitable algorithm, considering the Trade-Off between attributes such as predictions speed, prediction accuracy and training time.