**DIFFERENCES BETWEEN** MACHINE LEARNING **AND** STATISTICAL MODELING

While both models do similar jobs despite varying outputs, there are still differences between machine learning and statistical modeling worth understanding. Below is a short list of additional differences to consider when determining which route to take:

# Different schools of thought;

#### Machine learning is a subfield of computer science and artificial intelligence and explores the study and construction of algorithms, instead of programmed instructions.

## Statistical modeling is a subfield of mathematics and deals with finding relationships between variables to predict outcomes.

**Data types**: Machine learning algorithms can predict data on the fly and are capable of learning from trillions of observations, one by one. Machine learning is best used with data that has a wide number of attributes and a high number of observations.

Made Assumptions: Statistical models embody **a set of assumptions** concerning the generation of the observed data and similar data from larger populations

. Machine learning, on the other hand, can be considered **statistics minus checking of models and assumptions** and instead relying on the predictive accuracy of models.

Predictive Power and Human Effort: Machine learning is the science of getting computers to act without being explicitly programmed thus no human interaction.

It explores the study and construction of algorithms that can learn from and make predictions on data. Statistical models are about mathematics and require the modeler to understand the relation between variables before putting in the data.

Birthdays: Machine learning and statistical modeling were born in different eras. Statistical modeling has been around for centuries. However, machine learning was defined more recently by computer scientists like Arthur Samuel and Tom Mitchell in the mid-to-late 1950’s and flourishing in the 1990’s, emerging from computer science and evolving from the study of pattern recognition and computational learning theory in artificial intelligence.

While it may seem that machine learning and statistical modeling are two different branches of [predictive modeling](https://www.infogix.com/products/predictive-models/)

There is no clear-cut boundary between the two, making them nearly the same. **The boundaries have started to blur rapidly throughout the past decade,** with both branches learning significantly from one another.

In order to stay successful in the dynamic world of analytics, data scientists have to put equal weight in learning both practices to help their customers or organizations stay relevant in the fast-paced world of data analytics.