

Machine Learning is essentially a process by which a computer improves its own performance through continual incorporation of new data into a pre-existing statistical model.

Machine learning is heavily reliant on data sets, and without new data improvements cannot be pursued and patterns cannot be found. Pattern recognition is of great importance to machine learning and allows for the identification of data trends. Recognition can be carried out physically, mathematically, or algorithmically. By using pattern recognition in combination with the data provided, the system can improve its accuracy over time by learning patterns in the data.

Machine learning is a branch of AI and computer science. In this instance machine learning focuses on the use of algorithms and data sets to attempt to imitate human learning to improve the systems accuracy over time. To some extent machine learning acts as a pathway to AI.

Social media makes large use of ML in a variety of ways to applications it is used in by social media are for friend recommendations and product advertising. This is done through recording and analyzing the users' activities such as chat, likes, comments, and time spent viewing specific content. Through this process it learns from your activities and can better make suggestions for you. This would be nearly impossible to accomplish with traditional programming as there is no way to know exactly what a user will do next ahead of time, with machine learning the ability to locate patterns and predict user actions ahead of time becomes possible by learning from existing examples.

Observations, features, quantitative data, and qualitative data all play a key role in the operations of machine learning systems. Observation is the act of watching something, which a machine learning algorithm does constantly as it sifts through data trying to observe patterns or

features within the data. Features are distinct part of something in the case of machine learning these features can consist of patterns or possibly significant outliers that fall outside of the pattern presented by the data. Quantitative data is any form of data that can be counted or measured, while qualitative data is descriptive in nature making it observable, but not measurable. Both forms of data can be used in the machine learning process as through observation and measurement a ML system can learn and improve.

Personally, machine learning is a very interesting field that I have only begun to investigate. As I dig deeper into the subject itself it presents an interesting learning opportunity for me, and a potential tool that can be applied in fields such as wildlife management which I am passionate about. There is always more to learn in the programming field and virtually any field or industry and machine learning presents a tool to help us pursue greater understanding in these areas. I still have only begun to scratch the surface of ML and already it shows great potential and has caught my interest. I look forward to learning more about it and trying to gain a greater understanding of its principles and potential applications.