**MACHINE LEARNING**

**Machine learning** (ML) is the [scientific study](https://en.m.wikipedia.org/wiki/Branches_of_science) of [algorithms](https://en.m.wikipedia.org/wiki/Algorithm) and [statistical models](https://en.m.wikipedia.org/wiki/Statistical_model) that [computer systems](https://en.m.wikipedia.org/wiki/Computer_systems) use to effectively perform a specific task without using explicit instructions, relying on patterns and inference instead. It is seen as a subset of [artificial intelligence](https://en.m.wikipedia.org/wiki/Artificial_intelligence). Machine learning algorithms build a [mathematical model](https://en.m.wikipedia.org/wiki/Mathematical_model) based on sample data, known as "[training data](https://en.m.wikipedia.org/wiki/Training_data)", in order to make predictions or decisions without being explicitly programmed to perform the task.[[1]](https://en.m.wikipedia.org/wiki/Machine_learning#cite_note-1)[[2]](https://en.m.wikipedia.org/wiki/Machine_learning#cite_note-bishop2006-2):2Machine learning algorithms are used in a wide variety of applications, such as [email filtering](https://en.m.wikipedia.org/wiki/Email_filtering), and [computer vision](https://en.m.wikipedia.org/wiki/Computer_vision), where it is infeasible to develop an algorithm of specific instructions for performing the task. Machine learning is closely related to [computational statistics](https://en.m.wikipedia.org/wiki/Computational_statistics), which focuses on making predictions using computers. The study of [mathematical optimization](https://en.m.wikipedia.org/wiki/Mathematical_optimization) delivers methods, theory and application domains to the field of machine learning. [Data mining](https://en.m.wikipedia.org/wiki/Data_mining) is a field of study within machine learning, and focuses on [exploratory data analysis](https://en.m.wikipedia.org/wiki/Exploratory_data_analysis) through [unsupervised learning](https://en.m.wikipedia.org/wiki/Unsupervised_learning).[[3]](https://en.m.wikipedia.org/wiki/Machine_learning#cite_note-3)[[4]](https://en.m.wikipedia.org/wiki/Machine_learning#cite_note-4) In its application across business problems, machine learning is also referred to as [predictive analytics](https://en.m.wikipedia.org/wiki/Predictive_analytics).