

Describe a Feature Vector and the Vector Space model

A feature vector can be described as a vector which contains multiple elements which are referred to as features. With respect to machine learning, a feature vector is a multi-dimensional vector of numerical values (or ‘features’) that may represent an object. It can also be used for pattern recognition and abstract representation of image computation. There are many techniques to compare two feature vectors. The Euclidean Distance is one such model that can be used.

A vector space model is essentially an algebraic model that can be used to represents documents or objects as vectors using indexes as identifiers. These models are used to retrieve, filter & index information. It was originally implemented in the SMART information retrieval system developed at Cornell University in the 1960s. A limitation of a vector space model is that with longer documents or larger sets of data, similarity values aren’t great. As a result, they become poorly represented. Keywords also need to be exact, since semantics are very sensitive.