Machine Learning for Engineering and Science Applications
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Introduction Week 09

Hello, and welcome back, here is a, we will start of week nine, the small introduction to some of the topics we will be looking at.

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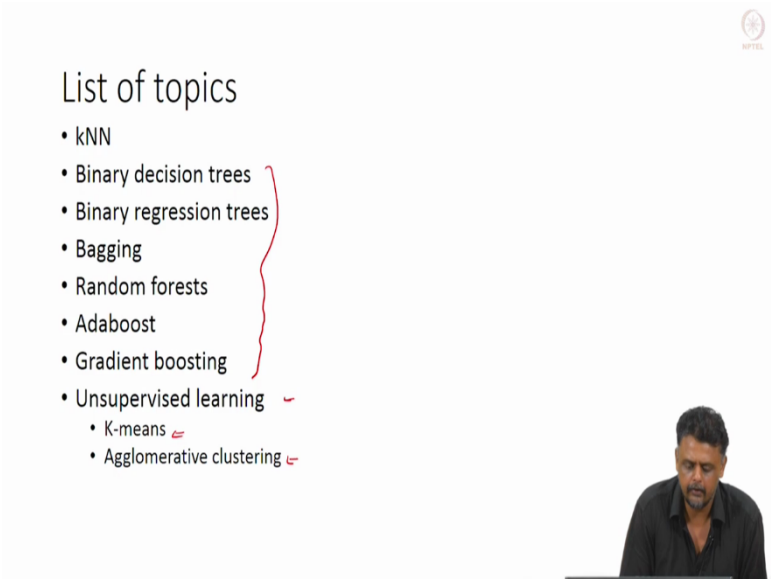

So far we have been looking at deep neural networks or deep learning algorithm starting with plain artificial neural networks. what we will look at in this week or a collection of algorithm, very powerful algorithms which have, which are which have been used prior to this deep learning what you call deep learning era, which is last 5 to 8 years.

So these algorithms are again still very powerful again. They retain many of their advantages. So, we will look at these algorithms the following algorithms. We will look at K nearest neighbors algorithms for supervised classification, binary decision trees, binary regression trees, bagging, random forests which are again this few these sets of algorithms now they are related because many all of them use the binary decision trees or binary regression trees, right, in some form. Most of them do.

And also we look at them as one single block or module but of course there will be separate lectures videos. We will also look at some unsupervised learning techniques which includes K-means and agglomerative clustering, okay. So these are very powerful techniques they still again the, many implementation of this techniques are still available in platforms like Python

and R and you are welcome to experiment with them. They are useful, used quite a bit in data analytics, still used. And their performance for instance, random forests prior to the advent of this deep neural networks success of let's say the Alex net, random forests were really one of the powerful tools used in medical image analysis and many other data analytics tasks, and even now they are being used in many cases, they are some of the best techniques to turn to. They are well studied lots of extremely optimized implementation of many of these algorithms are freely available for use in your application.

So, we will move on to the lectures, I have given a particular order here and we will try to stick to the order in the lectures also, okay. Thanks.