0:0:0.0 --> 0:0:0.230  
Mallikarjun Yadav Etaboina  
Yeah.

0:0:0.240 --> 0:0:0.730  
Mallikarjun Yadav Etaboina  
Hi, Nithin Makkina.

0:0:-1.-910 --> 0:0:1.370  
Nithin Makkina  
5 minutes I don't you introduce yourself, yes.

0:0:2.690 --> 0:0:7.60  
Mallikarjun Yadav Etaboina  
There are some so like so yeah.

0:0:7.70 --> 0:0:9.610  
Mallikarjun Yadav Etaboina  
My name is only Cajun, so I'm from Hyderabad.

0:0:9.810 --> 0:0:14.810  
Mallikarjun Yadav Etaboina  
So I have like 2 years of experience in machine learning and kind of stuff like data scientist.

0:0:15.110 --> 0:0:19.460  
Mallikarjun Yadav Etaboina  
So presently I'm working in randomly so I have some you know internship experience also.

0:0:19.650 --> 0:0:21.30  
Mallikarjun Yadav Etaboina  
So I wouldn't bother in running.

0:0:21.130 --> 0:0:25.930  
Mallikarjun Yadav Etaboina  
Then I run ML and BH and JS projects.

0:0:26.520 --> 0:0:29.980  
Mallikarjun Yadav Etaboina  
So I have like experience in cloud technologies also.

0:0:30.900 --> 0:0:32.480  
Mallikarjun Yadav Etaboina  
So like this way direction.

0:0:32.490 --> 0:0:34.20  
Mallikarjun Yadav Etaboina  
Yeah. Thanks.

0:0:36.290 --> 0:0:36.670  
Nithin Makkina  
OK.

0:0:36.780 --> 0:0:40.940  
Nithin Makkina  
So you're saying that you have some basic knowledge in machine learning, right?

0:0:41.570 --> 0:0:41.770  
Mallikarjun Yadav Etaboina  
Yeah.

0:0:42.790 --> 0:0:43.210  
Nithin Makkina  
OK.

0:0:43.250 --> 0:0:44.700  
Nithin Makkina  
So I'll start with basic questions.

0:0:44.710 --> 0:0:45.870  
Nithin Makkina  
So what is machine learning?

0:0:47.30 --> 0:1:1.80  
Mallikarjun Yadav Etaboina  
We are, like we said, language nothing but the subset of like artificial intelligent intelligence that involves the development of algorithms and statistical models, so that enables a computer to improve their performance on specific task through some learning from data.

0:1:1.90 --> 0:1:4.370  
Mallikarjun Yadav Etaboina  
So without being explicitly programmed, yeah.

0:1:7.390 --> 0:1:10.710  
Nithin Makkina  
OK, what are the main types of machine learning?

0:1:12.50 --> 0:1:15.370  
Mallikarjun Yadav Etaboina  
So like the they are like 3 main types of machine learning.

0:1:15.470 --> 0:1:20.60  
Mallikarjun Yadav Etaboina  
So one is supervised learning and unsupervised learning and reinforcement learning.

0:1:20.270 --> 0:1:24.760  
Mallikarjun Yadav Etaboina  
So supervise comes under the algorithm which is which will be trained on labeled data.

0:1:24.850 --> 0:1:26.280  
Mallikarjun Yadav Etaboina  
So where are they?

0:1:26.290 --> 0:1:33.260  
Mallikarjun Yadav Etaboina  
Have some input and output provided by the there and we have some algorithm learns to the map and input to the output.

0:1:33.410 --> 0:1:42.520  
Mallikarjun Yadav Etaboina  
So unsupervised comes where our training the unlabeled data, so it tries to learn patterns from the data and and structures the data without any supervision.

0:1:43.240 --> 0:1:51.800  
Mallikarjun Yadav Etaboina  
I reinforcement is nothing but the IT learns to make decisions by interacting with an environment to achieve maximum or like maximum cumulative rewards.

0:1:56.0 --> 0:1:56.490  
Nithin Makkina  
OK.

0:1:56.620 --> 0:1:59.50  
Nithin Makkina  
Can you elaborate the difference between overfitting and underfitting?

0:2:0.600 --> 0:2:8.510  
Mallikarjun Yadav Etaboina  
Yeah, overfitting is nothing, but it occurs mainly when a model learns training data more well, like more.

0:2:8.580 --> 0:2:17.650  
Mallikarjun Yadav Etaboina  
If you do more more training data which includes like noisy like outliers and it, it may lead to the poor performance of a model for unseen data.

0:2:17.820 --> 0:2:20.330  
Mallikarjun Yadav Etaboina  
So under fitting is nothing but it happens more.

0:2:20.340 --> 0:2:24.430  
Mallikarjun Yadav Etaboina  
It happens when the model is too simple and with less data.

0:2:24.440 --> 0:2:33.300  
Mallikarjun Yadav Etaboina  
If you do, if you do try to train on something and other like some patterns in the data, so it lead to a poor performance both on the training and unseen data, yeah.

0:2:35.780 --> 0:2:36.230  
Nithin Makkina  
Right.

0:2:36.240 --> 0:2:38.540  
Nithin Makkina  
Uh, can you define cross validation?

0:2:39.840 --> 0:2:44.150  
Mallikarjun Yadav Etaboina  
Yeah, like cross validation we use in the machine learning concepts, so it can.

0:2:44.160 --> 0:2:44.610  
Mallikarjun Yadav Etaboina  
It is a.

0:2:44.620 --> 0:2:47.140  
Mallikarjun Yadav Etaboina  
It is a statistical concept technique.

0:2:47.150 --> 0:2:57.630  
Mallikarjun Yadav Etaboina  
Whichever is the machine learning models, by dividing the data set into subsets like training and test like the in the model training some of the subsets are tested on remaining data.

0:2:57.780 --> 0:3:1.730  
Mallikarjun Yadav Etaboina  
So this process, repeated in multiple times with different subset.

0:3:1.880 --> 0:3:5.110  
Mallikarjun Yadav Etaboina  
So the average performance matrix is used to access the model quality.

0:3:5.120 --> 0:3:16.140  
Mallikarjun Yadav Etaboina  
So with the cross validation we can check the A model performance by dividing the data into subsets and we'll be using the average of the performance and we'll be finalizing on things.

0:3:16.150 --> 0:3:17.290  
Mallikarjun Yadav Etaboina  
So this just goes to relation.

0:3:20.70 --> 0:3:20.290  
Nithin Makkina  
Right.

0:3:20.300 --> 0:3:22.350  
Nithin Makkina  
Uh, do you know bias variance tradeoff?

0:3:23.390 --> 0:3:24.440  
Mallikarjun Yadav Etaboina  
Yeah, like bias.

0:3:24.570 --> 0:3:26.320  
Mallikarjun Yadav Etaboina  
Or using machine learning.

0:3:26.470 --> 0:3:34.700  
Mallikarjun Yadav Etaboina  
So it's a tradeoff which which balance between their model, which model, the ability to capture, the underlining pattern in the data.

0:3:34.950 --> 0:3:39.400  
Mallikarjun Yadav Etaboina  
That is why us so it is sensitivity or to fluctuations in training data.

0:3:39.730 --> 0:3:47.360  
Mallikarjun Yadav Etaboina  
So it has some high bias model too simplistic, so learning to underfit is can leading to underfit while high variance.

0:3:47.650 --> 0:3:51.960  
Mallikarjun Yadav Etaboina  
So model fits the training data too slowly, too closely and leading to overfitting.

0:3:52.170 --> 0:4:0.480  
Mallikarjun Yadav Etaboina  
So this whole or like is to find a model complexity that maximize the both bias and variance of optimal predictive performance on unseen data.

0:4:2.870 --> 0:4:4.120  
Nithin Makkina  
Office feature regeneration.

0:4:5.270 --> 0:4:10.40  
Mallikarjun Yadav Etaboina  
So feature is is one of the important concept in machine learning pipeline.

0:4:10.250 --> 0:4:19.720  
Mallikarjun Yadav Etaboina  
So feature using is nothing but selecting uh, selecting the column names and and transforming and creating some relevant features like features.

0:4:19.730 --> 0:4:24.0  
Mallikarjun Yadav Etaboina  
Nothing but variables from raw data to improve the performance of the machine learning over them.

0:4:24.300 --> 0:4:25.740  
Mallikarjun Yadav Etaboina  
So good feature engineering.

0:4:25.750 --> 0:4:30.430  
Mallikarjun Yadav Etaboina  
Can be lead to the model good model to learn patterns and make accurate predictions.

0:4:31.340 --> 0:4:41.680  
Mallikarjun Yadav Etaboina  
Yeah, if you change some, if you do some feature engineering or we can get the good performance in the model or if you want some bad, you can do it like while using feature engineering, yeah.

0:4:45.520 --> 0:4:47.270  
Nithin Makkina  
Difference between bagging and boosting?

0:4:48.910 --> 0:4:51.160  
Mallikarjun Yadav Etaboina  
Yeah, bagging is or something, is it?

0:4:51.170 --> 0:5:0.920  
Mallikarjun Yadav Etaboina  
It can be also got bootstrap aggregating so it involves mainly certain training multiple instances of the same learning algorithms on different subset of the training data.

0:5:1.170 --> 0:5:17.920  
Mallikarjun Yadav Etaboina  
So like sample the replacement and it it can average their predictions, so it random for some main popular bagging algorithm in machine learning and boosting it can focus on like multiple instances of same algorithm sequentially.

0:5:17.930 --> 0:5:29.120  
Mallikarjun Yadav Etaboina  
So whereas our new model correct the errors made by the previous one, the final prediction is weighted sum of individual model prediction example in adapa boosting and gradient boosting.

0:5:32.950 --> 0:5:33.690  
Nithin Makkina  
What is deep learning?

0:5:34.990 --> 0:5:41.640  
Mallikarjun Yadav Etaboina  
Yeah, deep learning is a subset of machine learning that deals with the neural networks contain many layers like deep neural networks.

0:5:41.930 --> 0:5:46.940  
Mallikarjun Yadav Etaboina  
So this networks are capable of learning some complex patterns from large amount of data.

0:5:47.210 --> 0:5:57.910  
Mallikarjun Yadav Etaboina  
So in deep learning it has a it has been successfully in tasks such as image speech recognition due to his ability, it automatically learns hierarchical features from the data.

0:6:0.940 --> 0:6:4.820  
Nithin Makkina  
Like uh, cat to explain about activation functions in neural networks.

0:6:5.700 --> 0:6:13.970  
Mallikarjun Yadav Etaboina  
So activation function uh, it can be used in nonlinearities into neural networks, allowing like it can allow to learn complex patterns.

0:6:14.520 --> 0:6:21.980  
Mallikarjun Yadav Etaboina  
Common activation function includes sigmoid, sigmoid, reload, tan Chen, softmax.

0:6:22.100 --> 0:6:27.780  
Mallikarjun Yadav Etaboina  
So Sigma is like it mail maps input values to range between zero and one to hold.

0:6:27.850 --> 0:6:31.150  
Mallikarjun Yadav Etaboina  
So if you if you do some backward propagation in neural networks.

0:6:31.160 --> 0:6:54.830  
Mallikarjun Yadav Etaboina  
So if we change, if we the values between the IT it changes the value between zero and one and the output or reload the output outputs the input directly if it is positive otherwise it's output is 0 tannage it maps input value to range between minus one to place one softmax is used in multiclass classification problems it converts the raw score into probabilities.

0:6:58.160 --> 0:6:59.320  
Nithin Makkina  
Explain gradient descent.

0:7:0.680 --> 0:7:5.210  
Mallikarjun Yadav Etaboina  
The gradient descent is an optimization or is like optimizing technical algorithm.

0:7:5.460 --> 0:7:11.980  
Mallikarjun Yadav Etaboina  
It can be maximize the cost function in machine learning so it can be work late working.

0:7:12.0 --> 0:7:16.810  
Mallikarjun Yadav Etaboina  
It can work by moving in the directions of the like steepest degrees in the cost function.

0:7:17.140 --> 0:7:25.690  
Mallikarjun Yadav Etaboina  
So with the respect of the model proper parameter, this process repeated until another converge to a minimum like it can it it it should be reached to the global minima.

0:7:25.700 --> 0:7:30.410  
Mallikarjun Yadav Etaboina  
Then it can resulting in the best fitted model parameter, yeah.

0:7:30.850 --> 0:7:33.130  
Mallikarjun Yadav Etaboina  
Thanks till they don't.

0:7:34.560 --> 0:7:34.910  
Nithin Makkina  
OK.

0:7:34.940 --> 0:7:35.130  
Nithin Makkina  
I'll.

0:7:35.150 --> 0:7:35.600  
Nithin Makkina  
Actually.

0:7:35.610 --> 0:7:35.850  
Nithin Makkina  
OK.

0:7:35.860 --> 0:7:36.590  
Nithin Makkina  
We'll get back to you.

0:7:37.390 --> 0:7:37.960  
Mallikarjun Yadav Etaboina  
Yeah.

0:7:38.30 --> 0:7:38.260  
Mallikarjun Yadav Etaboina  
Yeah.

0:7:38.210 --> 0:7:38.550  
Nithin Makkina  
Thank you.

0:7:38.270 --> 0:7:38.630  
Mallikarjun Yadav Etaboina  
Thank you.

0:7:38.640 --> 0:7:39.440  
Mallikarjun Yadav Etaboina  
Thank you. Yeah.