Machine learning questions and answers:

1. What is the tradeoff between bias and variance ?

Bias:

* Bias is context of the machine learning is error introduced in model assumptions or simplifications, its systematically misleading to the underpredicted or overpredicted target variable across different samples from the populations.
* Bias example: if the model assumes linear relationship between variables when true relationship is non linear. It exhibits bias. This bias can gives us inaccurate predictions and poor generalization for unseen data.
* How to prevent this bias: to use appropriate model complexity and consider alternative approaches.

Variance

* Variance measure the stability model’s predictions across different datasets.
* High variance can be the over fitting the model
* Low variance can be the robust and generalize the unseen data.

1. Supervised learning vs Unsupervised learning

supervised learning (SL): in SL we have feature variable and target varible we called as labels columns. with help of label dataset that algorithm know what data is going to be trained and what data to be predcited by using test data. SL we using two types of algorithms one is regression and clasification. regression is used to to predict the numerical values and classification is used to categorical values in the dataset.

unsupervised learning (USL): in USL we dont have labeled dataset instead we have to find out the what kind of patterns, features we have in the dataset. in USL we using clustering to achieve this results. there are two types of clustering one is k means clustering and hierarchical clustering

1. How is KNN differ from k means clustering ?