**Chapter 1**

1. ML is algorithms that find pattern or relations in dataset.
2. Finding pattern in consumer shopping habit, medication prescription studying patient’s history, recommending search result, and YouTube algorithms.
3. Datasets on which supervised ML learn (train) and predict the testing set.
4. Giving the data containing x and y, finding the pattern between them. For example finding that if a person buy certain products will he buy y product. Recognizing the object in the images after telling them the different.
5. Feature Reduction, Clustering, anomaly detection and
6. Reinforcement Learning
7. Clustering
8. Supervised L
9. ML model in which data is constantly feed
10. Out-of-core learning divides the data into batch, train model on each batch so it avoid the huge computation resources.
11. Classification
12. Model parameter is whether you want linear or polynomial model and hyperparameter is the regularization parameter.
13. Large enough Dataset, best model, good dataset, computing resources
14. Over fitting, reduce the complexity of the model, split the data into training and testing dataset, cross validating the split.
15. Test set is subset of dataset on which model had not been train on, it is used to evaluate the performance of model.
16. Validation set is the multiple splitting of datasets into training and testing set for the evaluation of the model.
17. Overfitting when the model is launch
18. Cross validation compare the model performance without the need of validation set.