Introduction

1. ML Fundamentals
2. ML Common Use Cases
3. Understanding Supervised and Unsupervised Learning Techniques

Clustering

Clustering

1. Similarity Metrics
2. Distance Measure Types: Euclidean, Cosine Measures
3. Creating predictive models
4. Understanding K-Means Clustering
5. Understanding TF-IDF, Cosine Similarity and their application to Vector Space Model
6. Case study

Implementing Association Rule Mining

Decision Tree Classifier

Implementing Association Rule Mining

1. What is Association Rules & its use cases?
2. What is Recommendation Engine & it's working?
3. Recommendation Use-case
4. Case study

Decision Tree Classifier

Feat

Intro

Decision Tree Classifier

1. How to build Decision trees
2. What is Classification and its use cases?
3. What is Decision Tree?
4. Algorithm for Decision Tree Induction
5. Creating a Decision Tree
6. Confusion Matrix
7. Case study

Introd

Random Forest Classifier

1. What is Random Forests
2. Features of Random Forest
3. Out of Box Error Estimate and Variable Importance
4. Case study

Support Vector Machines

Support Vector Machines

1. Case Study
2. Introduction to SVMs
3. SVM History
4. Vectors Overview
5. Decision Surfaces
6. Linear SVMs
7. The Kernel Trick
8. Non-Linear SVMs
9. The Kernel SVM

Feature Selection and Pre-processing +

Feature Selection and Pre-processing

1. How to select the right data
2. Which are the best features to use
3. Additional feature selection techniques
4. A feature selection case study
5. Preprocessing
6. Preprocessing Scaling Techniques
7. How to preprocess your data
8. How to scale your data
9. Feature Scaling Final Project

Introduction to Artificial Neural Networks

Introduction to Artificial Neural Networks

1. The Detailed ANN
2. The Activation Functions
3. How do ANNs work & learn
4. Gradient Descent
5. Stochastic Gradient Descent
6. Backpropogation
7. Understand limitations of a Single Perceptron
8. Understand Neural Networks in Detail
9. Illustrate Multi-Layer Perceptron
10. Backpropagation – Learning Algorithm
11. Understand Backpropagation – Using Neural Network Example
12. MLP Digit-Classifier using TensorFlow
13. Building a multi-layered perceptron for classification
14. Why Deep Networks
15. Why Deep Networks give better accuracy?
16. Use-Case Implementation
17. Understand How Deep Network Works?
18. How Backpropagation Works?
19. Illustrate Forward pass, Backward pass
20. Different variants of Gradient Descent

Statistics fundamentals

1. Graphically Displaying Single Variable
2. Measures of Location
3. Measures of Spread
4. Covariance and Correlation
5. Probability
6. Joint Probability and independent events
7. Conditional probability
8. Bayes' Theorem

ML with Python

ML with Python −

1. Applications of Machine Learning
2. Supervised vs Unsupervised Learning
3. Python libraries suitable for Machine Learning

Regression +

Clus

Reco

Regression

1. Training and Testing
2. Forecasting and Predicting
3. Theory and how it works
4. program the Best Fit Slope
5. program the Best Fit Line
6. R Squared and Coefficient of Determination Theory
7. Model evaluation methods

Reco

Classification

1. Introduction
2. Applying K Nearest Neighbors to Data
3. Euclidean Distance theory
4. Decision Trees
5. Regression Trees
6. Random Forests
7. Boosting Algorithm
8. Principal Component Analysis
9. Linear Discriminant Analysis

Clustering

Clustering

1. Handling Non-Numerical Data for Machine Learning
2. K-Means with Titanic Dataset
3. K-Means from Scratch in Python
4. Finishing K-Means from Scratch in Python
5. Hierarchical Clustering with Mean Shift Introduction

Recommender systems