PEAKS2TAILS

FINANCE DATA **PROFESSIONAL**

EXCEL + PYTHON

Learn Now

WWW.PEAKS2TAILS.COM

MODULE 1–PRIMER

1 INTRODUCTION TO MACHINE LEARNING

- What is Machine Learning
- Structured vs Unstructured Data
- Types of Learning (Supervised, Unsupervised, Reinforced)
- Applications of Machine Learning in Real Life

2 MATH TOOLBOX FOR ML

- Linear Algebra
- Lagrangian Multipliers
- Vector Algebra (Addition, Product, Projections)
- Gradient Descent
- Matrix Algebra (Transpose, Multiplication, Inv, Eigen Values)
- Parameter Estimation

PEAKS2TAILS

MODULE 1–PRIMER

(CONTINUED) MATH TOOLBOX FOR ML

- Optimization
- Maxima and Minima (calculus based)
- Maximum Likelihood Method (MLE)
- Maximum a Posteriori (MAP)

3 GETTING STARTED WITH PYTHON

- Python basic data types - CRUD
- Numpy
- Python Plotting
- Pandas
- Probability & Stats in python
- Regression in Python. Time Series in Python
- Monte Carlo Simulations in Python

PEAKS2TAILS

MODULE 2-PRIMER

4

LINEAR REGRESSION

5

TYPES OF REGRESSION

6

TIME SERIES MODEL

- Ways to estimate coefficients in Regression Model
- Regression Assumptions (Multicoll., OVB, Serial Corr., etc)
- Simple vs Multiple Linear Regression
- Stepwise regression
- Principal Component Regression
- MCMC
- Kalman Regression
- Checking Stationarity of Data
- Auto-correlation & Partial Auto-correlation Functions
- Deterministic, Stochastic Trend & Seasonality
- Fitting ARIMA models
- LSTM - Long Short Term Memory

PEAKS2TAILS

MODULE 3 – SUPERVISED LEARNING

7

DECISION BOUNDARY ALGORITHMS

- Linear Discriminant Analysis
- Non Linear SVM
- Linear SVM
- Kernel SVM

8

LOGISTIC REGRESSION

- Logistic Regression

9

DECISION TREES

- Classification Trees
- Regression Trees
- Stooping & Pruning Criterias

PEAKS2TAILS

MODULE 3 – SUPERVISED LEARNING

(Classification)

10
KNN

11
DECISION BOUNDARY ALGORITHMS

12
LOGISTIC REGRESSION

Distance Measures

K- Nearest Neighbour

Gradient Descent

Forward Propagation

Backward Propagation

ROC & CAP Curve

Confusion Matrices

PEAKS2TAILS

MODULE 4 – SUPERVISED LEARNING

(Regression)

13

BIAS VS VARIANCE TRADE OFF

14

REGULARISATION TECHNIQUES

K Fold Cross Validation

Lasso

Ridge

Elastic Net

PEAKS2TAILS

MODULE 5 – UNSUPERVISED LEARNING

15

DIMENSIONALITY REDUCTION

- Principal Component Analysis (PCA)

16

CLUSTERING

- Hierarchical Clustering
- K-Means Clustering
- Partitive Clustering

PEAKS2TAILS

MODULE 6 – REINFORCEMENT LEARNING

17

MARKOV DECISION PROCESS

18

MODEL BASED LEARNING VS MODEL FREE LEARNING

19

ON POLICY EVALUATION VS OFF POLICY EVALUATION

State, Action, Rewards Matrix

Analytical Solution

Iterative Procedure

Random Exploration & Exploitation Utility Based Method

Utility Based Method SARSA

20

DATA PREPARATION

21

DATA WRANGLING

22

EXPLORATORY DATA ANALYSIS

PEAKS2TAILS

MODULE 7 – NATURAL LANGUAGE PROCESSING

(NLP)

- Cleaning
- Regex
- Tokenisation
- Lowercasing
- Normalisation
- Stop words
- Bag of words
- Stemming
- n- Grams
- Document Term Matrix
- Term Frequency (Word Cloud)
- Document Frequency

PEAKS2TAILS

23

FEATURE SELECTION

24

FEATURE ENGINEERING

25

MODEL TRAINING & VALIDATION

MODULE 7 – NATURAL LANGUAGE PROCESSING

(NLP)

- Chi Sq Test
- Mutual Information
- n- Grams
- POS
- Normalisation

DURATION - 200 HOURS
(HINDI)

FEES- 40,000 (ONE YEAR ACCESS)
48,000 (LIFETIME ACCESS)

MODE- ONLINE

MORE INFORMATION

86-97-86-97-86

www.peaks2tails.com

peaks2tails@gmail.coom