



DATA SCIENCE USING R

Training Proposal

TRAINING FEATURES

Objective of the Training

- To explain the various techniques used in the field of Machine Learning through combination of theory, application and hands-on training

Mode of Training

- Classroom type using Projector

Teaching Methodology

- Case Study style of teaching with Hands-on experience using R language

Pre-requisites for attendees

- Basic understanding of Data Science Concepts, Programming and R
- Laptops with R Software installed and Internet working

Duration

- Six days with 8 hours/day

Proposed Schedule

- First Week of the Month

DELIVERY PLAN

Time Slot	Topics Coverage	Tool
9 am to 11 am	Data Distributions; Data Normality; Measures of Normality – Central Tendency, Variability, Shape	Power point
11.15 am to 1.15 pm	Sampling; Statistical Inferences about mean/proportion/variances	Power point
1.15 pm to 2.15 pm : Lunch Break		
2.15 pm to 4.15 pm	Dimensionality Reduction; Data Reliability; Non-parametric Testing	Power point
4.30 pm to 6.30 pm	Hands-on Session using R	R

DAY 1: INTRODUCTION TO PROBABILITY & STATISTICS

Time Slot	Topics Coverage	Tool
9 am to 11 am	Correlation; Regression – Univariate, Multivariate, Logistic	Power point
11.15 am to 1.15 pm	Model Building, Performance Evaluation & Assumptions	Power point
1.15 pm to 2.15 pm : Lunch Break		
2.15 pm to 4.15 pm	Hands-on Session using R	Power point
4.30 pm to 6.30 pm	Case Study	R

DAY 2: CORRELATION & REGRESSION

Time Slot	Topics Coverage	Tool
9 am to 11 am	Panel Data Regression; Time Series Analysis	Power point
11.15 am to 1.15 pm	Forecasting models – ARIMA, ARCH, GARCH	Power point
1.15 pm to 2.15 pm : Lunch Break		
2.15 pm to 4.15 pm	Hands-on Session using R	Power point
4.30 pm to 6.30 pm	Case Study	R

DAY 3: FORECASTING & PREDICTIONS

Time Slot	Topics Coverage	Tool
9 am to 11 am	Decision Trees; CHAID; Random Forests; Bayesian Classification	Power point
11.15 am to 1.15 pm	Rule-based; Back-propagation; Support Vector Machine; Lazy learners	Power point
1.15 pm to 2.15 pm : Lunch Break		
2.15 pm to 4.15 pm	Evaluating Classifier; Improving Accuracy; Model Selection	Power point
4.30 pm to 6.30 pm	Case Study with Hands-on Session using R	R

DAY 4: CLASSIFICATION (SUPERVISED LEARNING)

Time Slot	Topics Coverage	Tool
9 am to 11 am	Types of Data in Cluster Analysis; Validity of clusters	Power point
11.15 am to 1.15 pm	K-Means; K-Medoids; BIRCH	Power point
1.15 pm to 2.15 pm : Lunch Break		
2.15 pm to 4.15 pm	DBSCAN; Expectation-Maximization; Fuzzy C-Means	Power point
4.30 pm to 6.30 pm	Case Study with Hands-on Session using R	R

DAY 5: CLUSTERING (UNSUPERVISED LEARNING)

Time Slot	Topics Coverage	Tool
9 am to 11 am	Association Rule Mining – Apriori and FP Tree Algorithm	Power point
11.15 am to 1.15 pm	Market Basket Analysis using R	R
1.15 pm to 2.15 pm : Lunch Break		
2.15 pm to 4.15 pm	Text Mining – Term Frequency, Inverse Document Frequency	Power point
4.30 pm to 6.30 pm	Text-based Recommender System using R	R

DAY 6: MINING FREQUENT PATTERNS AND ASSOCIATIONS

Dr Rajan Gupta, PhD, CAP, GStat

Rajan is one of the youngest and first few persons from India to clear Certified Analytics Professional (CAP) exam from INFORMS and gain Graduate Statistician (GStat) accreditation from American Statistical Association, USA. He is currently serving as CAP Ambassador for Asia Region.

He has done his PhD (Computer Science), MCA & Graduation from University of Delhi and Executive Program in Analytics from IIM-Ranchi. He has more than 7 years of experience in the field of research, analytics and training both at industry & academic level. He has more than 50 research publications in form of Books, Journal Papers, Government Reports, Conference Proceedings, Magazine Articles and the likes under his name. He has mentored and guided data science professionals around the world from organizations like Tech Mahindra, TCS, Nokia, Deloitte and the likes. He is an authorized resource person to conduct Analytics related sessions in Asia Region by INFORMS.



RESOURCE PERSON

ABOUT TCF CONSULTANCY

TCF Consultancy is the service brand of THREEFIVE CONSULTANCY LLP located in Delhi. It is a boutique firm taking care of Research and Analytical needs of the organizations, which includes project execution and trainings. They have 9 years of past experience for handling various Research and Analytics based projects across the country.

TCF Consultancy is currently managing the operations of training sessions, seminars and workshops of Dr. Rajan Gupta, CAP, Gstat after he became the CAP Ambassador for INFORMS in Asia Region in June 2018.