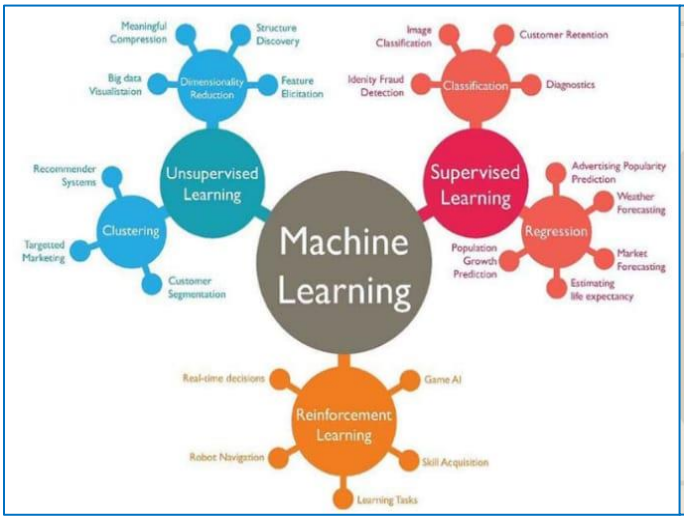
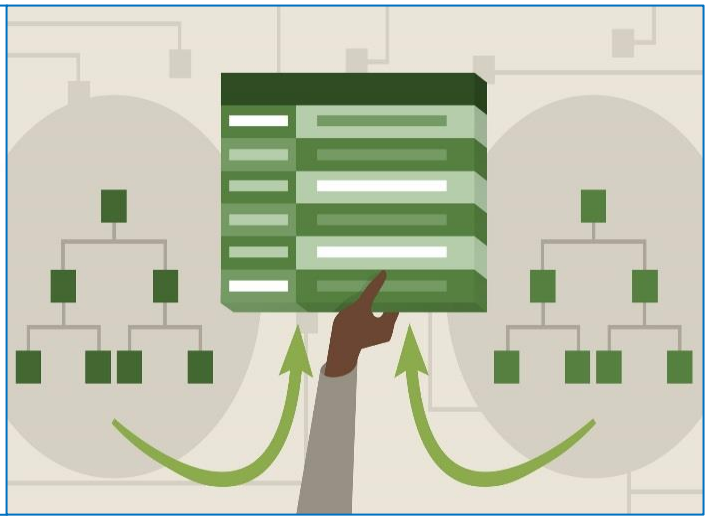
Tel No:+97126654546 | Fax No:+97126654182 | Email: aisha@cmc-me.com | www.cmc-me.com





IT132:
Machine Learning and Predictive Models

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Training Description:

Predictive models have become accessible to all users with the advancement of technology. This course offers a complete overview of supervised Machine Learning algorithms, and their role in the enhancement of predictions in most industries and by most organizations.

This intensive course covers all models utilized under different technologies (SAS, Statistica and SPSS), enabling participants to become expert practitioners by evaluating and selecting appropriate solutions with suitable technical packages for their organizations.

This course includes interactive discussion and the use of exercises and case studies. Each Machine Learning algorithm is supported by its own case study with step by step outputs that go in parallel with its multi stage analysis. All algorithms are detailed with sequential screen shot applications on comparative technologies such as SPSS, SAS, Statistica and Excel.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Understand the true meaning of Machine Learning
- ✓ Comprehend the key differences between Data Analysis and Machine Learning
- ✓ Apply testing and validating samples into Machine Learning models
- ✓ Submit an overview of the best analytic solutions
- ✓ Implement fine-tuned estimation with complete predictive models

Training Designed for:

This course is intended for any level of professional interested in how Machine Learning can assist their organization, would benefit from this course. These include professionals from industries including, but not limited to, banking, insurance, retail, government, manufacturing, healthcare, telecom, and airlines.

Target Competencies:

- Predictive Analysis
- Predictive Models
- Data Analysis
- Data Analytic Models

Training Program:

DAY ONE:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ Data Analysis and Simple Regression
  - Introduction to Data Analysis Logic
  - Testing two groups on their means and proportions
  - Profiling two groups in one single chart
  - Testing multiple groups on their means and proportions
  - Profiling multiple groups in one single chart

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- Simple regression
- Regression vs. Correlation
- Sensitivity analysis of quantitative variables

DAY TWO:

❖ Multiple and Logistic Regressions

- Introduction to Machine Learning
- The Gradient Descent logic
- Multiple Regression vs. Simple Regression
- Variability analysis for estimations
- Dummy variables
- Similarities and differences between Logistic and Multiple regressions
- Simplifying complex models
- Stepwise regression

DAY THREE:

❖ Discriminant Analysis

- Optimized Profiling
- Two-Group Discriminant Function
- Attribution of Cases
- Model Evaluation
- Classification Functions
- Mahalanobis Squared Distances
- Probability Method
- Model's Reduction
- Generalized Discriminant Analysis

DAY FOUR:

❖ Decision Trees

- What are Decision Trees?
- Binary Trees
- Quality of a decision tree
- Rules of pruning
- CART: Classification Tree
- CART: Regression Tree
- CHAID tree
- Random Forest tree

DAY FIVE:

❖ Nearest Neighbor, Bayesian, Neural Network and Deep Learning

- Conditional probabilities
- Prediction by probabilities
- Distance from neighbors
- K nearest distances from neighbors
- Weights in a Neural Network model
- Hidden layers role
- Neural Network pros and cons

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- Deep Learning
- Introduction to Big Data

❖ Course Conclusion
❖ POST-TEST and EVALUATION

Training Requirement:

"**Hands-on practical sessions, equipment** and **software** will be applied during the course if required and as per the client's request."

Please note that the above topics can be amended as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:
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Training & Career Development Department