



Why Big Data and Data Science

Businesses and the governments are finding ways to make sense of all the available data in this big data era. Business Analytics thus finds favor as it utilizes tools and techniques like data mining, pattern matching, data visualizations and predictive modeling to predict and optimize outcomes and derive value from the data. Equipped with this useful information, organizations can compete better in cut-throat markets both locally and globally.

Today, data is everywhere. We create it simply with the touch of a button. But how much of it is actually useful? Whether you are in finance, operations, sales & marketing or planning, you may be in touch with millions of data points every day without being aware of how to derive valuable information from this data.

Who should attend this Data Science training

This training is ideal for professionals who work in the following industries: Information Technology, Web/Ecommerce, Healthcare, Law Enforcement, Banking and Insurance, Biotechnology, Human Resource Management. The application areas include critical product analysis, target marketing, customer lifecycle management, customer service, social media behavior and link analysis, fraud detection, genetic research, and inventory management.

What you will learn on Data Science

The course will enable you to:

- Explore data to find new patterns and relationships (Data Mining)
- Predict the relationship between different variables (Predictive Modeling, Predictive Analytics)
- Predict the probability of default and create customer Scorecards (Logistic Regression)
- Understand a Problem in Business, explore and analyze the problem
- Use tools like R (open source) and Excel to interpret data
- Solve business problems using analytics (in R) in different fields

How you will be certified

Certificate of Attendance: upon completion of the course duration

Certificate of Excellence: upon completion of the course assignment

Date: 27-29 April 2015
(Monday - Wednesday)
Time: 0900 - 1700
Venue: Suite 2B-21-1, Level 21, Block 2B,
Plaza Sentral, Jalan Stesen Sentral 5,
KL Sentral, 50470 Kuala Lumpur,
Malaysia.

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Course Outline

Day 1: Analytics, Data Science and Statistics

Data Exploration:

- Different types of analytics
- Data variables & data summarisation methods
- Relationship among data variables
- Visualisation of data distribution

Probability Concept and Statistical Inference:

- Central tendency, symmetry and skewness
- Random variables
- Formulation of probability distribution
- Central limit theorem
- Sampling and statistical inference
- Confidence intervals
- Hypothesis testing

Data Downloading and Reading:

- Importing and reading data from local files, Excel files and XML (using R)
- Importing data from MySQL and the web
- Subsetting and sorting data
- Reshaping and merging data

Case Study 1: Statistical approaches to banking sector credit card data analysis using MS Excel

Day 2: Predictive modeling using Regression

Correlation and Regression:

- Analysis of Variance
- Regression Analysis
- Linear regression
- Multivariate Linear Regression (Using Excel and R)
- Logistic regression (Using Excel and R)
- ANOVA, R-Square, p-values, vif, Multicollinearity
- Heteroskedasticity, Gini coefficient
- Logistic Regression: Gini coefficient, vif (Using Excel and R)

Time Series Modeling:

- Moving averages approach
- Autoregressive modeling approach
- Model Estimation, Validation and forecasting
- Identify the ARIMA model
- Estimate the best ARIMA models and model validation
- Using ARIMA model to perform sales forecasting

Case study 2: Production data analysis using regression (Tool: MS Excel & R)

Day 3: Data Mining with Computational Intelligence

Data Mining

Computational Intelligence:

- Fuzzy Computation, Neural Computation, Evolutionary Computation

Fuzzy Computation:

- Fuzzy sets and operations
- Fuzzy logic and approximate reasoning
- Fuzzy inference models

Neural Computation:

- A neuron
- Linear Separability
- Perceptron, Multilayered Perceptron
- Backpropagation algorithm
- Self-organizing map
- Fuzzy adaptive resonance theory

Evolutionary Computation:

- Genetic algorithm
- Evolution-based models
- swarm intelligence and emerging models

Case Study 3: Evolutionary computation - application of evolutionary computation approach to production process optimization

About Go Training

Go Training applies effective pedagogical methodologies that demonstrate case studies and hands-on practical skills, in addition to explaining clearly how things work in principle. Every course that we conduct is delivered by a subject matter expert who holds the academic qualification and working experience in that specialization. On the days when they are not teaching, our trainers work on consultancy projects and technical deliveries. Their work has received numerous recognition and awards in the industry. Our team of trainers has been invited as keynote speakers at numerous international conferences, and as principal consultants for various industries.

About the Instructor

Dr Shing Chiang Tan received his PhD degree from Multimedia University in 2008. Currently, he is an Associate Professor with the Faculty of Information Science and Technology, Melaka campus, Multimedia University, Malaysia. In the faculty, he teaches subjects related to probability and statistics, mathematics, artificial intelligence, computational intelligence and programming. His research interests include computational intelligence (CI) and pattern recognition techniques (artificial neural networks, evolutionary algorithms, decision trees, etc) and applications to research in data science such as data classification, pattern recognition, condition monitoring, defect detection, fault diagnosis, medical diagnosis and gait analysis. He has numerous international publications in the mentioned research. He won several international awards. He has several research collaborations with the researchers from local and foreign institutes.

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