



Training Outline



Fundamental Data Analytics

Aurora Technology Development Inc.

Fundamental Data Analytics

Course Outline

1: Basic concepts and principles – 8h

- Introduction
- Definitions and Goals
- Basic Statistics and probability concepts
- Business cases and examples

2. General steps of data analysis - 8h

- Data storage
- Data cleaning and filtering
- Data analysis
- Polishing and report

3: Introduction to dataset and data warehouse systems - 16h

- Concepts of dataset
- characteristics of dataset under the big data context
- Concepts of data warehouse and database
- Differences between data warehouse and database
- Data warehouse management
- Cost effectiveness

4: Introduction to Database systems and operations - 16h

- Relational database system and Sequential Query Language
- Case study: MySQL
- Non-relational database system
- Case study: MongoDB, Google Firebase/Firestore
- Other form of data files

5: Introduction to Data filtering - 16h

- Concepts of data filtering
- Purposes and expected result
- General rule setup and processes
- End result verification

6: Introducing Data filtering tools - 16h

- Popular integrated filtering tools
- In R
- In SPSS
- in Q

7: Basic to data analysis algorithms - 16h

- General categories of analysis algorithms
- Linear regression
- Logistic regression
- Naive bayesian

- fundamental of neural network

7: Classes of data analysis: supervised vs unsupervised - 8h

- Definition of supervised learning and unsupervised learning
- Difference between supervised and unsupervised learning
- User cases and examples

8: Introduction to data analysis framework: R - 8h

- Introduction to R
- Basic syntaxes, operations, and IDE
- Basic manual of analysis algorithms
- Case study: predicting housing price via sample dataset by employing various analysis algorithms
- wrap up

9: Introduction to data analysis framework: Tensorflow - 8h

- Introduction to Tensorflow corresponding programming language: Python
- Basic syntaxes, and operations
- Introduction to Tensorflow as a software framework
- Basic functions and usage
- Implementing analysis algorithms
- Case study: predicting tips by mining customer's behaviour through Yelp dataset
- wrap up

10: Introduction to data analysis framework: Weka - 8h

- Introducing Weka: background and driven programming language, Java
- Manual of Weka graphic user interface
- Manual of Weka application programming interface
- Implementing analysis algorithms
- Case study: finding relationship between cuisine and customer's behaviour by mining Yelp dataset
- Wrap up

11: Introduction to data analysis framework: Hadoop/MapReduce - 8h

- Introduction to Hadoop/MapReduce as a software framework
- Running analysis algorithm
- Case study: mining products data to find consumers' behaviour
- Wrap up

12: Running and maintaining data analysis instance - 8h

- Benefits and goals
- Solution: Google Firebase MLkit
- Solution: Machine Learning on AWS
- Introducing Kubernetes
- Tensorflow on Kubernetes: Kubeflow

Tuition fee: \$8,700 per person