PREDICTIVE ANALYTICS USING SUPERVISED STATISTICAL LEARNING TECHNIQUES

October 22 – 23, 2018

COURSE DESCRIPTION

This training program is a survey of the numerous techniques in supervised machine learning. Statistical machine learning refers to a wide range of approaches in creating models and tools in evaluating the estimates may it be for prediction or for inference. However, this course only focuses on the main methodologies in supervised machine learning which includes the following:

- basic concepts in statistical learning
- linear and logistic regression
- classification problems and tree-based methods
- neural networks and support vector machines.

With a little preview of the theoretical concepts of these tools, the course offers the relevant applications in different fields and areas.

TARGET AUDIENCE

Attendees who want to know the methods in the rising field of statistical machine learning are highly encouraged to participate. Also, those who want to expand their statistical programming skills and implementation in R are invited.

The training is for market researchers who conduct churn analysis, business managers who forecast sales and detect fraud, practitioners in the social sciences who handle specific data analysis, to name a few.

PREREQUISITE KNOWLEDGE

Participants must at least have taken introductory courses in basic statistics such as computing for summary measures (mean, standard deviation, correlation, among others) and their use and interpretation.

R you ready? TRAINING PROGRAMS IN STATISTICS

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TOPICS TO BE COVERED AND SCHEDULE

DAY 1

8:00 am – 8:30 am	Registration
8:30 am – 10:00 am	Statistical Learning ▪ Supervised versus Unsupervised Learning ▪ Regression versus Classification Problems ▪ Introduction to R Regression Methods ▪ Simple Linear Regression
10:00 am – 10:30 am	Break
10:30 am – 12:00 pm	Regression Methods (cont) ▪ Multiple Linear Regression ▪ Quantitative Predictors
12:00 pm -1:00 pm	Lunch
1:00 pm – 3:00 pm	Regression Methods (cont) ▪ Logistic Regression ▪ Workshop: Linear Regression (On Sales Forecasting)
3:00 pm – 3:30 pm	Break
3:30 pm – 5:30 pm	Workshop: Logistic Regression (On Credit Scoring) Workshop: Linear vs Logistic Regression (Case Study)

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TOPICS TO BE COVERED AND SCHEDULE

DAY 2

8:00 am – 8:30 am	Registration
8:30 am – 10:00 am	Tree-based Methods ▪ Regression Trees ▪ Workshop: Regression Trees (On Salary Prediction)
10:00 am – 10:30 am	Break
10:30 am – 12:00 pm	Tree-based Methods (cont) ▪ Classification Trees ▪ Workshop: Classification Trees (On Churn Analysis)
12:00 pm -1:00 pm	Lunch
1:00 pm – 3:00 pm	Tree-based Methods (cont) ▪ Random Forests ▪ Workshop: Random Forests (On Medical Diagnosis)
3:00 pm – 3:30 pm	Break
3:30 pm – 5:30 pm	Neural Networks ▪ Overview of Neural Network ▪ Case Study Review Support Vector Machine ▪ Overview of SVM ▪ Case Study Review

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ABOUT THE RESOURCE PERSON

Gian Louisse Roy is an instructor and information officer in the UP School of Statistics. He graduated cum laude with a bachelor's degree in Statistics and now currently finishing his master's degree in Statistics. He handled courses in elementary statistics, mathematical statistics, and probability theory. More than this, he's been an active member of the Philippine Statistical Association, Inc. in the Training Committee and Social Media, Information, and Communication Committee. He conducted trainings with private and government institutions with focus and expertise on infographics and factsheet design and principles. His research interests include mathematical statistics and inferential thought.