Module Synopsis

Introduction to Statistics for Data Science

This module provides students with an introduction to elementary probability theory and statistical concepts and principles that lay the foundation to understand and learn the statistical procedures and methods in the subsequent modules. The topics covered include descriptive statistics, rules of probability, and probability distributions of discrete and continuous random variables, sampling distributions, statistical estimation and hypothesis testing.

Introduction to Programming for Data Science

This module provides students with the fundamental skills to code applications to retrieve, clean and visualize data using the Python programming language. Students learn key concepts such as what structured and unstructured data are, and how they can create and manipulate relational and NoSQL databases to explore data and to create visualizations that can help them gain useful insights from it.

Applied Machine Learning

This module enables students to apply machine learning to solve practical problems in many financial, medical, commercial, and scientific applications. Students will learn different concepts, programming models and algorithms that enables computational systems to adaptively improve their performance with experience accumulated from the observed data. This module focuses on two main approaches to machine learning: Supervised/Unsupervised Learning and Deep Learning.

AI Human-Interface

This module enables students to create programs that employ artificial intelligence techniques to perform autonomous actions without human intervention. Students learn how to develop intelligent agents such as virtual assistants (chatbots) and recommender agents that are useful in a variety of business applications such as providing assistance to users and helping to increase sales through cross-selling or upselling.