Introduction To Data Mining

Course Summary

Description

This course provides the students with the skills necessary to set up, execute, and interpret the output from data mining analysis tools.

Topics

- Data Mining In Context
- Why Master The Art Of Data Mining?
- Data Mining Methodology: The Virtuous Cycle Revisited
- Customers And Their Life Cycles
- Data Mining Techniques And Algorithms
- What Data Should And Does Looks Like
- Building Effective Predictive Models
- Taking Control: Setting Up A Data Mining Environment
- Who Needs Bag Balm And Pants Stretchers
- Who Gets What? Building A Best Next Offer Model For An Online Bank
- Please Don't Go! Churn Modeling In Wireless Communication
- Converging On The Customer: Understanding Customer Behavior In The Telecommunications Industry
- Who Is Buying What? Getting To Know Supermarket Shoppers
- Waste Not, Want Not: Improving Manufacturing Processes
- The Societal Context: Data Mining And Privacy

Audience

This course is intended for users, power users, programmers, analysts, DBAs, Data Modelers, or anyone else who needs to do data mining.

Prerequisites

Students should have at least some experience with coding SQL for any relational database management system plus at least a conceptual understanding of Data Warehousing.

Duration

Three days

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Course Outline

I. **Data Mining In Context**
    A. What Is Data Mining?
    B. What Can Data Mining Do?
    C. The Business Context For Data Mining
    D. The Technical Context For Data Mining
    E. The Societal Context For Data Mining

II. **Why Master The Art Of Data Mining?**
    A. Four Approaches To Data Mining

III. **Data Mining Methodology: The Virtuous Cycle Revisited**
    A. Two Styles Of Data Mining: Directed And Undirected
    B. The Virtuous Cycle Of Data Mining
    C. Identifying The Right Business Problem
    D. Transforming Data Into Actionable Results
    E. Acting On The Results
    F. Measuring The Model's Effectiveness
    G. What Makes Predictive Modeling Successful?

IV. **Customers And Their Life Cycles**
    A. Who Is The Customer?
    B. The Customer Lifecycle
    C. Targeting The Right Customers At The Right Time

V. **Data Mining Techniques And Algorithms**
    A. Different Goals Call For Different Techniques
    B. Three Data Mining Techniques
    C. Automatic Cluster Detection
    D. Decision Trees
    E. Neural Networks

VI. **What Data Should And Does Looks Like**
    A. What Should Data Look Like?
    B. What Does Data Really Look Like?
    C. How Much Data Is Enough?
    D. Derived Variables
    E. Case Study: Defining Customer Behavior
    F. Dirty Data

VII. **Building Effective Predictive Models**
    A. Building Good Predictive Models
    B. Working With The Model Set
    C. Using Multiple Models
    D. Experiment!

VIII. **Taking Control: Setting Up A Data Mining Environment**
    A. Getting Started
    B. Case 1: Building Up A Core Competency Internally
    C. Case 2: Building A New Line Of Business
    D. Case 3: Building Data Mining Skills On Data Warehouse Efforts
    E. Case 4: Data Mining Using Tessera Rme

IX. **Who Needs Bag Balm And Pants Stretchers**
    A. The Vermont Country Store
    B. The Business Problem
    C. The Data
    D. The Technical Approach
    E. The Future

X. **Who Gets What? Building A Best Next Offer Model For An Online Bank**
    A. Gaining Wallet Share
    B. The Business Problem
    C. The Data
    D. Approach To The Problem
    E. Building The Models
    F. In A More Perfect World

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Course Outline (cont'd)

XI. **Please Don't Go! Churn Modeling In Wireless Communication**
   A. The Wireless Telephone Industry
   B. The Business Problem
   C. Building A Churn Model: A Real-Life Application
   D. The Data
   E. Lessons About Building Churn Models

XII. **Converging On The Customer: Understanding Customer Behavior In The Telecommunications Industry**
   A. Dataflows
   B. The Business Problem
   C. The Data
   D. A Voyage Of Discovery

XIII. **Who Is Buying What? Getting To Know Supermarket Shoppers**
   A. An Industry In Transition
   B. Three Case Studies
   C. Analyzing Ethnic Purchasing Patterns
   D. Who Buys Yogurt At The Supermarket?
   E. Who Buys Meat At The Health Food Store?

XIV. **Waste Not, Want Not: Improving Manufacturing Processes**
   A. Data Mining To Reduce Costs At R. R. Donneley
   B. Reducing Paper Wastage At Time Inc.

XV. **The Societal Context: Data Mining And Privacy**
   A. The Privacy Prism
   B. Is Data Mining A Threat?
   C. The Expectation Of Privacy
   D. Information In The Material World
   E. Information In The Electronic World
   F. The Promise Of Data Mining