Course: ENPM808L – Analytics for Decision Support
Semester: Fall 2016
Day(s): Wednesday
Time: 7:00PM – 9:40PM
Location: JMP 2120
Instructor: Dr. Bahram Meyssami
Phone: Email:

Course Description

The phenomenal growth of data assets (both within organizations and publicly) combined with advances in technology (in cloud computing and machine learning) have allowed organizations to leverage their data assets to enhance their decision making processes in order to achieve their missions. In addition, the availability of low-cost computing resources and open-source tools have accelerated this process.

This course focuses on practical methods to extract meaningful insights from (internal and external) data sources and to communicate those findings to stakeholders so they can be incorporated in operational work processes to achieve organizational goals. Students will use relevant tools, technologies and approaches for data manipulation, statistical analysis, predictive modeling, and visualization in case studies/projects. Cloud computing and distributed computing platforms including architectural approaches in implementing a Big Data Platform for decision making will be covered.

Students will use analytics tools and scripting languages for the implementation of projects. Some example languages/tools introduced are: Python and Tableau. Prior knowledge of scripting language such as Python or R will be helpful – but not required.

Textbook(s)

Recommended books and readings will be provided before class.

Course Outline

- Introduction to Advanced Analytics Applications
- Business Models and Decision Making
- Advanced Data Analytics Project Characteristics and Life Cycle
- Analysis Types: Descriptive, Predictive, and Prescriptive
- Analysis Approaches: Hypothesis-Driven and Data-Driven
- CRISP-DM methodology for analytics and data mining
- Tools and Programming Languages for Analysis
- Data Preparation, Dimension Reduction, and Model Evaluation
• Data Visualization
• Prediction and Classification
• Mining Relationships
• Data Management Architecture Alternatives – to support analytics model building
• Big Data Parallel Computing Approaches
• Use of Experimentation in Business and Operational Decision Making

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