Use Case

IE 7275: Data Mining in Engineering

OBJECTIVE To demonstrate the applications of data mining principles and processes on a practical problem. Use case counts 10% towards the final grade

DESCRIPTION The use case is intended to give students a hands-on experience of the entire data mining process, including business problem definition, solution design, data selection and/or collection, data processing, data exploration, data reduction and transformation, data mining technique selection, algorithm implementation, and predictive performance evaluation.

DUE DATE A complete use case report is due on **Dec. 4, 2017**

KEY MILESTONES

- **Due on Oct.2**: Use case problem statement, background information. Note that you may use one of the cases in the textbook (Chap. 21) as a template or define your own case template independently.
- **Due on Oct. 16**: Solution design, data collection. Data collection options: a). Search and download data sets from internet, i.e., public data; b). Data you gained through your co-op experience (you are responsible for the data right issues); c). Collecting through professional contacts.
- **Due on Oct. 30**: Data visualization/processing, data mining techniques.
- **Due on Nov. 13**: Implementation of algorithms.
- **Due on Nov. 20**: Performance evaluation and interpretation.
- **Due Dec. 4**: Complete and submit a use case report with detailed documentation of all the steps. In addition to the report, you submit a power point slide deck of your work (approximately 20 slides).

GROUP EFFORT Students work in groups of two to develop the use case

GRADING The use case is designed to test your ability to apply your fundamental understanding of the material to a practical problem unlike to a well-structured homework problem. The use case report will be checked for data collection effort (20%), completeness in terms of executing all data mining processes (20%), data visualization (20%), technical merit (20%), and report organization/writing/clarity (20%).