Section 3: Week 8: Data Mining IoT

Nate Bachmeier

TIM-8130: Data Mining

March 28, 2020

North Central University

Data Mining IoT

With ubiquitous access to high-bandwidth wireless networking and cloud computing, physical devices are evolving business capabilities to both monitor and react to changes across their supply chains. These devices produce enormous volumes of unstructured telemetry that require curation processes to transform raw data into business intelligence, enabling data-driven decisions that make the organization more competitive. During this transformation, data mining strategies extract patterns and statistical inferences through regression, clustering, classification, and rule association algorithms. Each of these algorithmic categories has distinct objectives for scenario-specific applications. Consider the difference between asking (1) how much a customer will spend versus (2) which customers are most alike. Point of sales (PoS) records can answer either question, though the question *structure* creates a dependency on which sales information becomes relevant facts into (1) regression versus (2) clustering solutions. Using the wrong approach or not defining this structure upfront always leads to nonsensical results. Instead, a formal data mining lifecycle begins with a specific question, then collects relevant facts to derive a conclusion. An evaluation method confirms that these conclusions are scientifically sound and not wishful thinking, through some statistical variance or cross-validation testing.

# Section I: Business Make-up

## Who uses IoT

## What types of data artifacts exist

## What business goals use these artifacts

# Section II: Collecting and Enhancement

## How can they enhance those artifacts

## Required Collection Resources

* Personal
* Hardware
* Future Capacity or needs exist

## What logical components or assumptions exist

* Logical Componet 1 of 2
* Logical Component 2 of 2

# Section III: Evaluation Procedures

## What statistical techniques can measure process ROI

# Section IV: Applications

## What data mining strategies can you apply to this information

# Conclusions and Future Studies