Big Data-based Clouds Health-Care and Risk Predictions based on Ensemble Classifiers and Subjective Analysis

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Discovering patterns from big data attracts a lot of attention due to its importance in discovering accurate patterns and features that are used in predictions of decision making.

The challenges in big data analytics are the high dimensionality and complexity in data representation. Granular computing and feature selection are among the challenge to deal with big data analytics that is used for Decision making. We will discuss these challenges in this talk and provide new projection on ensemble learning for health care risk prediction. In decision making most approaches are taking into account objective criteria, however the subjective correlation among different ensembles provided as preference utility is necessary to be presented to provide confidence preference additive among it reducing ambiguity and produce better utility preferences measurement for good quality predictions. Most models in Decision support systems are assuming criteria as independent. Different type of data (time series, linguistic values, interval data, etc.) imposes some difficulties to data analytics due to preprocessing and normalization processes which are expensive and difficult when data sets are raw and imbalanced. We will highlight these issues though project applied to health-care for elderly, by merging heterogeneous metrics for providing health care predictions for elderly at home. We have utilized ensemble

learning as multi-classification techniques on multi-data streams that collected from multi-sensing devices.

Subjectivity (i.e., service personalization) would be examined based on correlations between different contextual structures that are reflecting the framework of personal context, for example in nearest neighbor based correlation analysis fashion. Some of the attributes incompleteness also may lead to affect the approximation accuracy. Attributes with preference-ordered domain relations properties become one aspect in ordering properties in rough approximations. We outline issues on Virtual Doctor Systems, and highlights its innovation in interactions with elderly patients, also discuss these challenges in granular computing and decision support systems research domains. In this talk I will present the current state of art and focus it on health care risk analysis with examples from our experiments.

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