In-Depth Data Mining and Its Application in Stock Market*

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Abstract. Existing association rule mining algorithms are specifically designed to find strong patterns that have high predictive accuracy or correlation. Many useful patterns, for example, out-expectation patterns with low supports, are certainly pruned for efficiency in these mining algorithms. This talk introduces our ongoing research developing novel theories, techniques and methodologies for discovering hidden interactions within data, such as class-bridge rules and out-expectation patterns. These patterns are essentially different from traditional association rules, but are much more useful than traditional ones to applications such as cross-sales, trend prediction, detecting behavior changes, and recognizing rare but significant events. This delivers a paradigm shift from existing data mining techniques. In addition, the system of applying these techniques to stock market is briefly presented.