析的可疑金融交易动态识别[J].北京理工大学学报（社会科学版）,2013,15(5):52~59

维分析的可疑金融交易动态识别

Dynamic Suspicious Financial Transactions Recognition Based on Multi-dimension Analysis of Data Stream

投稿时间： 2012-07-06

DOI：

中文关键词：数据流 多维分析 可疑金融交易 反洗钱

English Keywords:data stream multi-dimension analysis suspicious financial transactions anti-money laundering

基金项目:国家自然科学基金资助项目“基于数据挖掘的可疑金融交易识别研究”(70771087);教育部社科规划基金资助项目“我国商业银行反洗钱有效性及其评价研究”(12YJA790

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中文摘要:

动态识别是改进我国目前可疑金融交易识别监测覆盖面不足和识别实时性较差的有效方法。针对动态识别的具体实现问题,基于数据流多维分析设计一种可疑突变特征动态识别算法。该算法根据金融交易数据流的特点,在筛选交易记录关键属性、构建数据流立方体结构以及确定通用路径的基础上,运用突变比量动态缩减时间框架,在不同维度及概念层上计算和维护立方体中数据单元的度量参数与突变比量参数,并以此为依据发现并识别出隐匿于数据流中的可疑突变特征。仿真结果表明:算法能够在有限的存储空间内完成对大规模金融交易数据流的实时处理,计算结果能够有效反映交易记录中频度、金额、类型等方面的可疑突变情况,从而达到动态识别可疑金融交易的目的。

English Summary:

The limitation in real-time and coverage is the main problem that troubles the suspicious financial transactions recognition in our country at present, and dynamic suspicious financial transactio recognition is an effective way to improve it. To implement dynamic recognition, an algorithm recognizing the suspicious mutation characteristics in financial transaction data stream based on multi dimension analysis of data stream is proposed in this paper. In the algorithm, according to the features of financial transaction data stream, MCTF (Mutation Comparing Time Frame) is used to he compute the measuring parameters and mutation comparing parameters from different dimensions and concept layers on basis of choosing key attributes of transaction records, constructing structu data stream cube, and determining general paths. Based on the results computed, the suspicious mutation characteristics in financial transaction data stream can be recognized. By experiments, the algorithm is shown to be able to process financial transaction data stream of huge scale in time in limited storage space, and the processing result can reflect the mutations of frequency, amount, an