

FlowData. The MP3 of databases

FlowData takes a massive database and, out of it, generates a virtual one that is much smaller and that contains the essential information

FlowData represents a new paradigm in the treatment of multidimensional databases. There is no need for a priori statistical hypothesis. Data patterns are obtained as they are. The technology has been extensively tested in projects for the aerospace sector. Preliminary tests in data analysis (no aerospace) gave very promising results. The first FlowData application would be for more sophisticated risk engines for credit card fraud detection

Technology solution supported by the Technical University of Madrid

Technology solution

FlowData represents a new paradigm in the treatment of multidimensional databases.

FlowData relies on tensor analysis techniques (High Order Singular Value Decomposition and Proper Orthogonal Decomposition) instead of statistical methods.

The main advantage is that there is no need to formulate a priori hypothesis regarding the statistical distributions of data. Global patterns are obtained as they are.

FlowData has been preliminarily tested in the problem of bank deposits distribution in the USA as a function of state, county and year.

Results are very promising both in terms of size reduction and reconstruction errors

Areas of application

- Finance, banking, and insurance
- Security

"FlowData generates small virtual databases that replicate the original ones while keeping the essential information"

FlowData treats a picture like a database



Original



Virtual

Market demands

- In the financial, banking and insurance sectors the use of real-time analytics applications to help in decision making is becoming widespread.
- These applications need to interact in real time with massive databases and this fact limits the algorithmic sophistication of the application itself.
- Being able to work with virtual (smaller) databases allows for the use of much more sophisticated algorithms and, therefore, for a more reliable decision making process.
- For example, in a practical application of credit card fraud detection FlowData would make it possible for its customer (a bank, for instance) to run in real time much more powerful algorithms to decide whether a certain transaction in an electronic point of sale is either blocked or allowed.
- In the security sector many situations exist that present strong similarities with what has been described above.

“Decision making in complex environments is becoming more and more sophisticated; FlowData facilitates this sophistication”

Competitive advantages

- It has been proven extensively in engineering problems with industrial customers.
- Preliminary tests in environments other than engineering have been very promising.
- Customers gain an easier and much more efficient operation of their risks engines so they can make sounder decisions.
- The technology is transversal and can be applied to different sectors that deal with massive databases.

“FlowData is the ideal partner for multinational corporations that continuously make decisions in complex environments. Next steps will aim to penetrate markets other than finance and banking that involve simultaneous data analysis and decision making”

References

- Five PhD Thesis completed in the frame of this technology development.
- Proven application to database analysis in the aerospace sector.

Development stage

- | | |
|-------------------------------------|---|
| <input type="radio"/> Concept | <input checked="" type="radio"/> Industrial Prototype |
| <input type="radio"/> R & D | <input type="radio"/> Production |
| <input type="radio"/> Lab Prototype | |

Market potential

- The global business intelligence market is estimated to reach \$20.81 billion in 2018 from \$13.98 billion in 2013, at an estimated Compound Annual Growth Rate (CAGR) of 8.28% during the same period of five years. The North American market captures a major share of 49% of the global BI market [Research and Markets, 2013].
- The market for big data will reach \$16.1 billion in 2014, growing 6 times faster than the overall IT market [IDC, 2013].
- Cloud infrastructure will be the fastest-growing sub-segment of the big data market, with a 2013-2017 CAGR of close to 50% [IDC, 2013].

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