PEPITO® – a Unique Data Mining Tool for Industrial Applications

Data mining has increasingly played a key role in the enterprise decision process because of today’s competitive necessity to respond to changing market conditions quickly and correctly, leveraging the enormous operating data now available for such process. PEPITo brings unique capabilities to meet the data mining requirements.

Data Mining, also known as Knowledge Discovery in Databases (KDD), is an information extraction activity aiming at discovering new knowledge and facts from large databases. Data Mining uses a broad range of tools from statistics, automatic learning, pattern recognition, database technologies, visualization and artificial intelligence. This mix of technologies is the core of the PEPITo platform, the Data Mining environment developed by PEPITe S.A.

PEPITo, combines visualization, statistics and predictive tools. Furthermore PEPITo comes with a scalable, high-performance object database, AllegroCache®, enable it to handle problems with very large data set (millions of objects with thousands of parameters each).

PEPITo in Manufacturing

The complexity of modern manufacturing processes in a global competitive environment forces manufacturers to invest massively in automation and monitoring systems. Unfortunately, these new installations are generating such large data flows that these valuable sources of hidden improvements are mostly under used. At the same time, Six Sigma, ISO9000 2000 quality management standards, etc. are pushing up the idea of continuously monitoring the system to make constant improvement.

PEPITo will help extract critical insight from this sea of data and enable continuous improvement of manufacturing processes. It has been successfully deployed in the manufacturing, energy and biotech sectors, with customers such as ALCOA, Hydro-Québec, Arcelor, Alstom T&D, and Goodyear.
Temporal Analysis in Manufacturing

Powerful GUI and Scripting

PEPITo includes a simple and intuitive user interface that hides the complexity of data mining from average users, enabling them to perform data mining tasks on simple problems right out-of-the-box.

GUI for Induction Trees

Perhaps the most unique feature of PEPITo is its powerful scripting language (KDLisp). KDLisp is fully programmable with direct access to all the data mining functions, in essence making PEPITo a flexible data mining toolbox. This is significant since most data mining applications involve an iterative process of exploring data models with different data mining techniques. The toolbox concept enables users to easily prototype different data models and to combine, modify and adapt the tools according to characteristics of the problem during this iterative process. It also allows users to integrate the solution seamlessly with existing IT infrastructure and within the business.

Additionally, PEPITo is integrated with an OODB, AllegroCache; knowledge gained during one data mining step can simply be stored and reused in subsequent processes.

For presentation of analysis results, PEPITo offers a complete suite of graphs, charts, trees and tables.

Feature Specification

Environment
- Standalone or Clients / Server
- Multi projects and multi sessions
- A complete development environment (scripting, client / server development)

Databases Interfaces
- MySQL
- ODBC
- Temporal format (e.g., SCADA systems)
- Flat files (e.g., CSV), XLS tables

Data Analyses
- Histograms
- Scatter Plots
- Dendrograms
- Temporal Curves
- Principal Component Analysis (PCA)
- Correlation Analysis

Modeling and Knowledge Discovery Methods
- Decision Trees (DT)
- Regression Trees (RT)
- Fuzzy Trees (FT)
- Random Trees Forest (Extra-Trees, RTF)
- Artificial Neural Networks (ANN)
- Multi-Linear Regression
- K-MEANS
- K-NN
- AutoClass
- Association Rules
- Support Vector Machines (SVM)

Outputs
- Exporting Models in XML, PMML
- Exporting Models for direct integration into SCADA systems
- Saving Graphs in JPG, SVG, PDF...
- Saving Results reports in HTML
- Saving projects in XML

For more information on PEPITo, please email pepito-sales@franz.com or call +1 (510) 452-2000, ext. 170

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