

JMSL Numerical Library for Java™ Applications

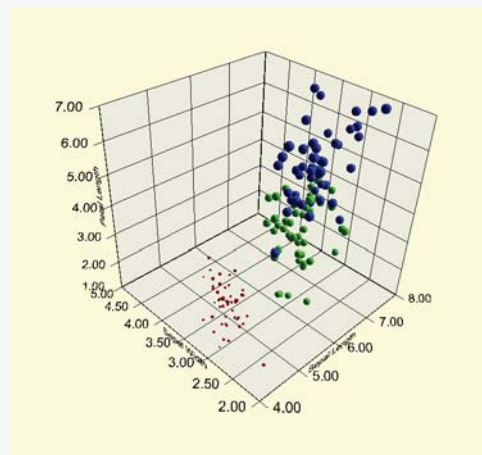
The Leader in Java Numerical Analysis

"I use JMSL's classes as the building blocks to construct Java applets. I tried other products that provided both numerical functions and graphing capabilities. However, they did not provide adequate interactivity comparable to Java applets. The features in JMSL that helped me the most were the extensive graphing capabilities, the large collection of statistical functions and the very accurate probability distribution functions."

Gary McClelland
Professor, Department of Psychology
University of Colorado, Boulder

Advanced Numerical Analysis Combined with Charting

The JMSL Library is the only solution for Java programmers that combines integrated charting with the reliable mathematical and statistical functionality of the industry-leading IMSL™ Numerical Library algorithms. This blend of advanced numerical analysis combined with visualization on the Java platform allows organizations to gain insight into valuable data and share analysis results across the enterprise quickly.



3D Charting Example Illustrating Fisher Iris Data, a Well-known Data Mining Data Set

APPLICATIONS

- Bioinformatics and Life Sciences
- Fraud Detection
- Risk Management and Portfolio Optimization in Finance and Insurance
- Energy Consumption Analysis
- Customer and Market Visual Data Analysis
- Manufacturing Yield Analysis
- Marketing Upsell
- R&D Analytical Tools for Data Analysis and Product Optimization
- Extending Analysis and Visualization Capabilities for ISVs
 - Business Intelligence
 - Databases
 - Supply Chain

Neural Network Engines for Tailored Business Analytics

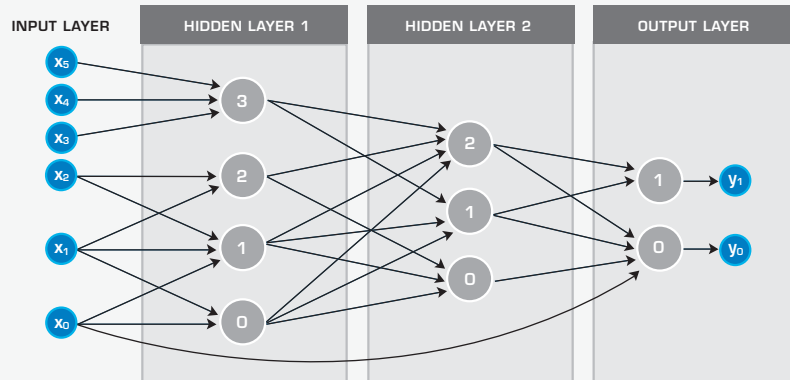
The JMSL Library includes both neural network forecasting and classification technology that adds to the broad selection of existing data mining, modeling and prediction technologies available across the IMSL Family of products.

Neural network technology mimics human problem-solving processes by applying knowledge gained from historical data to new problems and fine-tunes the forecasting accuracy over time. With this ability, businesses can extract information such as historical cost data and apply this to the neural network to forecast future costs with increasing degrees of accuracy.

The JMSL Library neural network implementation utilizes a feed forward network engine, which is especially suited for forecasting as well as binary and multi-classification problems.

WHAT'S NEW IN VERSION 4.0

- **Classification Neural Network engines for Binary and Multi-Classification**
- **3D Charting**
- **New High Performance Linear Programming Optimizer**
- **New random number generator using Mersenne Twister algorithm**
- **Dendrogram chart type for hierarchical cluster analysis**

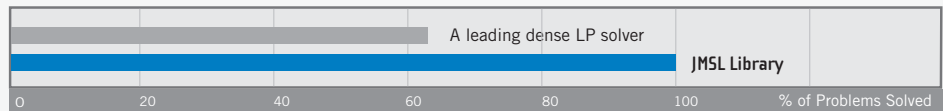


Multi-Layered Feed-Forward Network with 3 Layers and 2 Outputs

Linear Programming Optimization Robustness and Performance

Performance results for the JMSL Library proved comparable to a leading Fortran-based dense LP solver. Studies using 91 dense LP problems from Netlib produced the following robustness results.

Problems Solved for Dense LP Solvers



JMSL Library solves 100% of sample Netlib problems.

Mathematical, Statistical and Charting Functionality

Math Functionality	Statistics Functionality	Charting Functionality	Data Mining Functionality
Linear Systems Eigensystem Analysis Interpolation & Approximation Nonlinear Equations Optimization Finance & Bond Calculations Differential Equations ...and much more	Basic & Non-parametric Statistics Time Series and Forecasting Tests of Goodness of Fit Regression Multivariate Analysis Probability Distribution Functions Random Number Distributions ...and much more	Function and Spline Line, Pie, Scatter Bar, & Box Polar, Area, Contour, & Histogram Support for XML Date and Time Support Fully Interactive Capabilities High-Low-Close Heat Map Dendrogram 2D and 3D ...and much more	Cluster Analysis Neural Network Engines Neural Network Data Pre-processors ...and much more

Expert Professional Services

Augment development productivity by utilizing Visual Numerics' Professional Services team to help find the best solution to any problem and deliver the support needed to ensure continued success. The highly-skilled technical experts in Visual Numerics' Professional Services organization collaborate with customers to identify specific application requirements at the initial phase of every project. Visual Numerics' consultants provide all levels of support from custom algorithm development to helping customers better understand their analysis and visualization needs. Customers can rely on Visual Numerics' technical expertise and dedicated, hands-on help to achieve the highest return on investment.



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