

IMSL®

C# Numerical Library

Advanced Analytics for Microsoft® .NET Applications

"The IMSL C# Library enables us to quickly and efficiently provide advanced data analysis capabilities to SixSigma professionals seamlessly within our SigmaWorks Professional and RiskWizard software solutions."

SCOTT PATRIAS
SOFTWARE DEVELOPMENT MANAGER
NEXTSIGMA, INC.

"Because the IMSL C# Library is so easy to use, our Chief Engineer was able to rewrite our application in a week. This task would have taken a couple of months to complete if he rewrote the application himself. More important, using a commercial library freed him up to work on new technology and product development."

JEFF PREVOST
PRODUCT DEVELOPMENT MANAGER
INJURY SCIENCES

Optimized for



High Performance Business Analytics Made Easy

The IMSL C# Numerical Library for Microsoft® .NET Applications is a numerical analysis library written in 100% C#, providing broad coverage of advanced mathematics and statistics for the .NET Framework. Developers writing in C# or Visual Basic™ .NET (VB.NET) get seamless accessibility to analytics capabilities in the most integrated language for the .NET environment with the highest degree of programming productivity and ease of use with Visual Studio™.

The IMSL C# Library is the only numerical library of its kind to offer industry standard numerical analysis and charting for C# and VB.NET languages. This Library provides unprecedented analytic capabilities and the most comprehensive and accessible mathematical, statistical and finance algorithms for C# and VB.NET languages. With the IMSL C# Library, Visual Numerics has brought all of the benefits inherent in the C# and VB.NET languages to a new level by adding robust analytics to its broad set of capabilities.

Mathematical, Statistical and Charting Functionality

The algorithms available within the IMSL C# Library cover all of the major categories of functionality commonly used in numerical analysis, from commonly used math and statistical analysis functions like optimization and regression to advanced neural network and classification technology. By leveraging its pre-built algorithms, users can save weeks or months of development effort by embedding IMSL C# Library functions rather than building new algorithms from scratch.

This math and statistical algorithm functionality can be applied to an unlimited set of applications, such as bioinformatics and life sciences, fraud detection, risk management and portfolio optimization, manufacturing yield analysis and more.

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

WHAT'S NEW IN VERSION 5.0

- **Improved performance by embedding the Intel[®] Math Kernel Library**
- **Process control charts**
- **New functions**
 - **Sparse linear algebra**
 - **Spline 2D**
- **Additional updates and enhancements**

Improved Performance

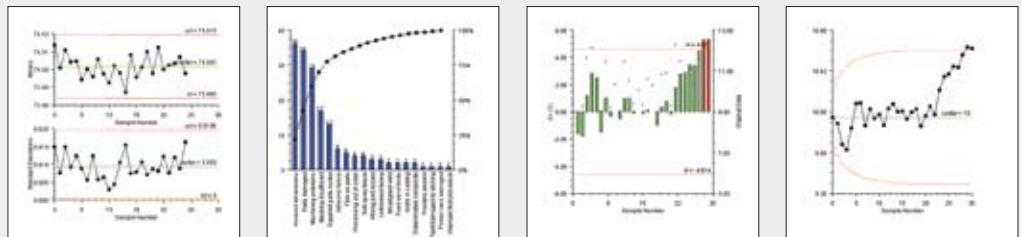
With V5.0, IMSL C# Library developers will have the option to use a version of the library that embeds the Intel Math Kernel Library. Utilizing the IMSL C# Library in this way will result in improved application performance for many tasks including linear algebra and matrix multiply functions.

Process Control Charts

The IMSL C# Library V5.0 offers 13 new classes of process control charts. Any application that requires quantitative analysis (e.g., SixSigma quality management applications, environmental applications, life sciences applications) could benefit from these highly customizable charts.

New types available include:

- X-Bar/R-Chart
- CuSum chart
- P-Chart and NP-Chart
- Pareto Chart
- U- and C-Charts



Many new quality control charts are available with the IMSL C# Numerical Library V5.0

New Functions

A new sparse linear algebra function adds to the extensive list of linear system functions available in the IMSL C# Numerical Library. The sparse linear algebra function efficiently solves the sparse matrix problems (matrices in which most of the elements are zero) that are common in application areas like engineering and financial modeling.

Also new with V5.0 is a spline 2D function to help with the computation of curves. Common application areas for spline computations include science (e.g., surface computations in physics), biomechanics and business.

Expert Consulting Services

Augment development productivity by utilizing Visual Numerics' expert consulting 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' consulting 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 simply 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.

USA Contact Information

Visual Numerics has Offices Worldwide