A New Kind of Science (NKS) Initiatives

NKS Lecture Tour
Stephen Wolfram is conducting a lecture series with stops at major universities and research organizations, discussing the ideas and discoveries in his bestselling book. Look for upcoming appearances in California, New York, and other locations.

www.wolframscience.com/appearances

NKS 2003 Inaugural Conference
NKS 2003 will take place from June 27-29, 2003, in Boston, Massachusetts. The conference will bring together individuals from a broad range of fields to learn, interact, and get involved with the ideas and implications of A New Kind of Science.

www.wolframscience.com/conference/2003

NKS Summer School 2003
Apply now for NKS Summer School 2003, for students who want to further investigate the science in a New Kind of Science. NKS Summer School will run from July 3–18, 2003, at Brown University in Providence, Rhode Island.

www.wolframscience.com/summerschool/2003

gridMathematica Provides Cost-Effective Mathematica® Software for Grids

A powerful parallel computing solution for the grid

With the release of gridMathematica, Wolfram Research offers a complete parallel computing solution for dedicated grids or clusters. It offers a highly cost-effective way of deploying Mathematica for parallel computations. gridMathematica can run on any cluster of machines, including Unix, Linux, Windows, and Mac OS X, and requires no more than TCP/IP connectivity.

This approach resonates well with customers and industry leaders, who are lending gridMathematica their full support. “Suan Microsystems, a long-time platform partner of Wolfram Research, is excited about the scalability that gridMathematica offers to high-end users,” states Joerg Schwarz, Senior Group Manager for Scientific and Engineering Computing at Sun Microsystems.

“Apple’s new Xserve running Mac OS X Server provides a superior and cost-effective platform for parallel computing solutions such as gridMathematica,” says Ron Okamoto, Apple’s Vice President of Worldwide Developer Relations. gridMathematica supports all common parallel programming paradigms, such as virtual shared or distributed memory, automatic or explicit scheduling, and concurrency, including synchronization, locking, and latency hiding. Other features include machine-independent implementation and parallel functional programming as well as future recovery and automatic reassignment of stranded processes in the event of a system failure.

For more information: www.wolfram.com/gridmathematica

Mathematica Ported to Intel’s Itanium Architecture

Mathematica soon to be available for a true 64-bit computing environment

Wolfram Research and NEC are excited to be among the first players to adopt the Itanium Processor Family (IPF) technology. The two companies have collaborated on the upcoming release of Mathematica 4.2 for NEC’s Itanium Linux platform.

Intel’s Itanium 64-bit architecture is designed for demanding next-generation computing applications like Mathematica. This new combination of NEC IPF server solutions and Wolfram Research’s world-leading technical computing software takes full advantage of the potential of the IPF architecture, which is designed to deliver the highest possible performance for enterprise and technical applications.

Among the immediate benefits cited is the ability to run larger and more complex calculations than possible on current Intel IA-32-bit processors. At the same time, Mathematica users who are running increasingly larger computations and applications find themselves limited by the 4-GB address ceiling in the current Intel IA-32-bit architecture. By comparison, IPF will give them one million terabytes (1 terabyte = 1,024 GB) of address space to work with.

For more information: www.wolfram.com/news/itanium.html

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ISSUE ONE 2003 A PUBLICATION OF WOLFRAM RESEARCH
Data Training and Analysis with Neural Networks

A robust environment for modeling systems with neural networks faster and easier than ever before.

The new Neural Networks application package from Wolfram Research provides a robust environment for creating predictive models. Artificial neural networks have revolutionized the way researchers solve complex, real-world problems in engineering, science, economics, and finance. Now users can test and explore neural networks faster and easier than ever before, using the computational power and flexibility of Mathematica.

Neural Networks is designed to give professionals and students the tools to train, visualize, and validate neural network models. It supports a comprehensive set of neural network structures and implements state-of-the-art training algorithms while taking full advantage of Mathematica’s powerful and flexible capabilities. It also includes special functions to address typical problems in data analysis, such as function approximation, classification and detection, clustering, nonlinear time series, and nonlinear system identification problems.

Professionals and students with little or no background in neural networks will benefit from the comprehensive documentation, the large number of examples, and the interactive online tutorial. At the same time, advanced users will appreciate the flexible options for each function and numerous possibilities for modifying the included algorithms, as well as the ability to develop new training algorithms of their own to further extend the capabilities of the package.

For more information: www.wolfram.com/applications/neuralnetworks