

NeuralTools

sophisticated neural networks for spreadsheets

What is NeuralTools?

NeuralTools® is a Neural Networks add-in for Microsoft Excel®. The field of Neural Networks is an expanding area that adds Artificial Intelligence to data analysis. With NeuralTools, Artificial Intelligence algorithms imitate low-level brain functions in order to “learn” the structure of your data. Once NeuralTools understands your data, it can make intelligent predictions given new, limited data.

NeuralTools works where you work – in Excel. Because NeuralTools uses the same interface as Excel, you can get up to speed quickly. With NeuralTools, you get the best of both worlds: Excel ease-of-use, combined with robust, accurate predictions.

Who should use NeuralTools? The software has a broad range of applications, including: stock market prediction, credit and loan risk assignment, credit fraud detection, forecasting sales, military targeting, general business forecasting, investment risk, medical diagnosis, research in scientific fields, and control systems. Businesses can use NeuralTools to make better decisions based on the software’s ability to learn relationships between the input and output data. No matter what industry you’re in, NeuralTools can work for you.

Neural Networks

Neural Networks are capable of learning complex relationships in data. By mimicking the functions of the brain, they can discern patterns in data, and then extrapolate predictions when given new data. The problems Neural Networks are used for can be classified in two general groups:

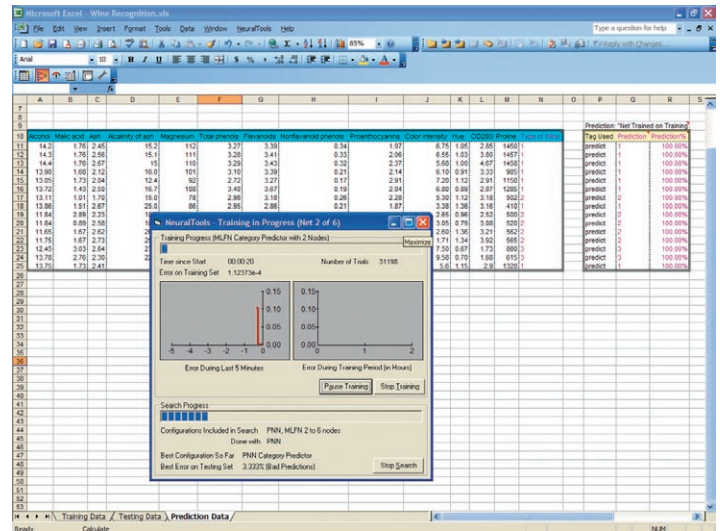
Classification Problems: Problems in which you are trying to determine what type of category an unknown item falls into. Examples include credit scoring groups and medical diagnoses.

Numeric Problems: Situations where you need to predict a specific numeric outcome. Examples include stock price forecasting and predicting the age of organisms in research.

Neural Networks offer a variety of advantages in solving these predictive types of problems:

Simple to Use

The process by which the Neural Networks analyze the problem is fully automated. The procedure is started by the user and the



Train, test, and predict with ease using NeuralTools!

software proceeds to learn trends in the data or the structure of the data, thus enabling it to classify or make numeric predictions. This means that Neural Networks do not require extensive academic training in order to be used successfully, unlike more traditional statistical methods.

Wide Area of Application

Neural Networks can be applied in virtually any industry where there are relationships between predictor variables (data you know or can obtain) and predicted variables (the unknown information you seek).

Robust Capacity

Neural Networks are capable of predicting answers in large, complex scenarios.

Advanced Neural Networks Inside Excel

NeuralTools brings Neural Networks to Excel like never before. NeuralTools is a true “add-in,” seamlessly integrating into Excel to add Neural Network capabilities. The NeuralTools software provides all the necessary tools for making better predictions with ease, using an interface you are familiar with: Excel-style menus and toolbars. NeuralTools functions and algorithms are optimized through the use of C++ .NET DLL files, not macro calculations.

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Using NeuralTools

Getting up and running with NeuralTools involves three simple steps:

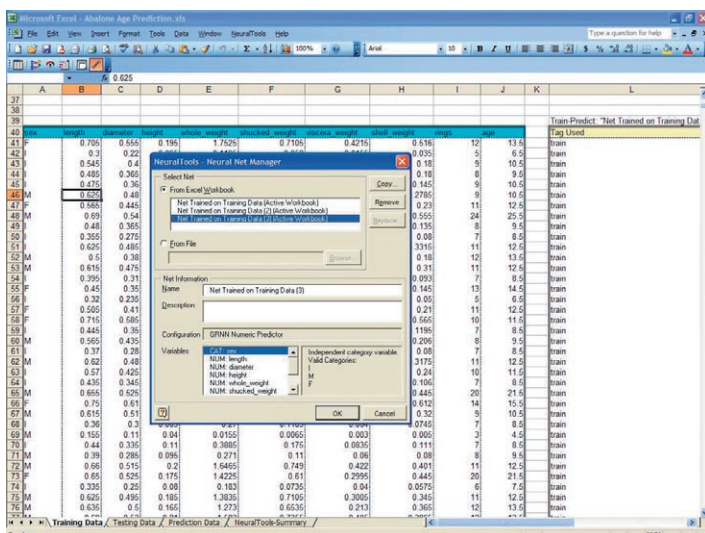
- 1. Train.** First, you must provide NeuralTools with accurate historical data representing your situation. NeuralTools will analyze the data and “train” itself on your data, learning the relationships between components and discerning patterns.
- 2. Test.** Next, provide NeuralTools with data set aside for testing purposes. Let NeuralTools run a prediction on this test data to see how accurate the predictions are. NeuralTools generates an extensive testing report with statistics and graphs.
- 3. Predict.** Once the testing stage is complete, you are ready to predict unknown numeric values or categories.

Automate Training, Testing, and Predicting of Data in One Easy Step

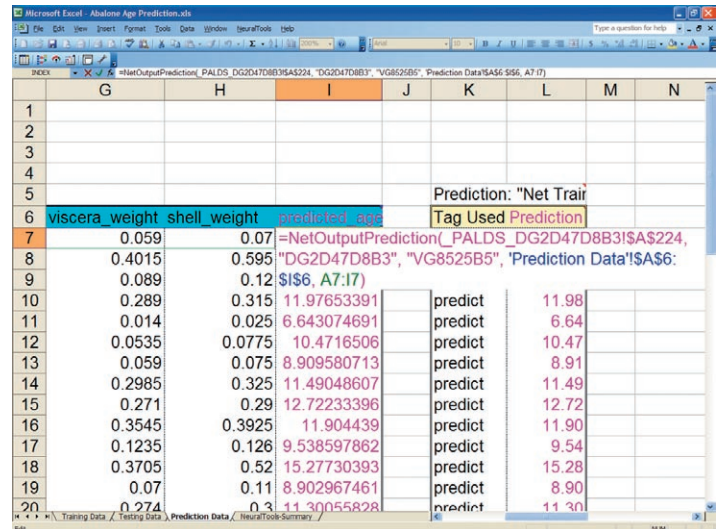
Most Neural Network tools require you to separate your data into training and testing datasets, then finally predict using the tested network. NeuralTools allows you to have one dataset and easily designate a percentage of randomly selected cases as test cases. This eliminates the hassle of having to set up two separate sets of data for training and testing the Neural Network. Then, NeuralTools can automatically predict the cells with missing data in the dependent variable.

Missing Data

Missing data unfortunately exists in most datasets and can be very time consuming and costly to remove by hand. NeuralTools can handle missing data in the independent variables with ease.



Organize your trained Neural Nets with the Neural Network Manager.



Because NeuralTools adds true Excel functions to your spreadsheet, predictions update live when input data changes.

There are three ways NeuralTools deals with missing data. First, you can have NeuralTools ignore the data altogether and eliminate the entire row or trial. Second, you can use the NeuralTools Missing Data Utilities to replace missing data. Or third, you can automatically train a Neural Network to predict what the missing data value should be for that row or trial. With the second and third methods, you maximize the number of training cases.

Live Prediction

As an Excel add-in, NeuralTools can fully leverage the flexibility of native Excel functions. After your network is trained and you are ready to make predictions on variables with an unknown outcome, NeuralTools Professional offers a function that allows for live prediction updating. That is, if you change values in your independent variables, NeuralTools will automatically update the prediction.

Types of Neural Networks Available

NeuralTools comes with the following types of Neural Network algorithms:

- PNN (Probabilistic Neural Networks)/ GRNN (Generalized Regression Neural Networks)**

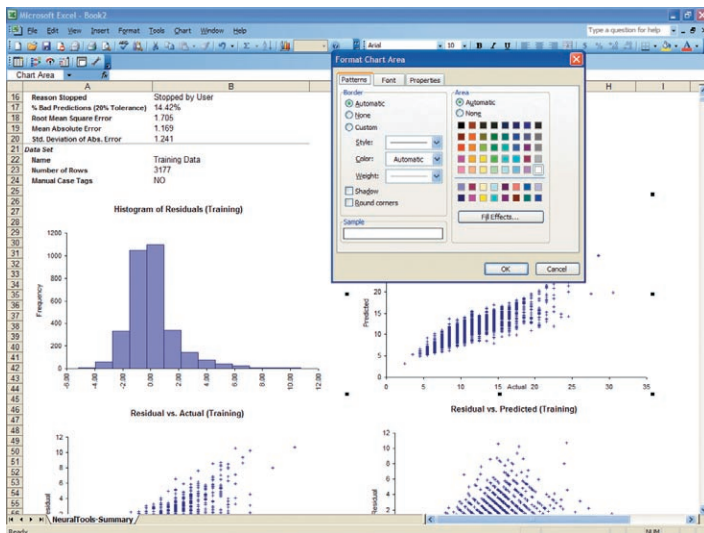
These allow you to train the Neural Network fast with no configuration required.

- MLFN (Multilayer Feedforward Networks)**

This is the most widely used type of Neural Networks.

- Best Net Search**

This allows NeuralTools find the best type of Neural Network for your data.



You can customize your NeuralTools charts and take them to other applications.

Neural Networks Manager

NeuralTools comes equipped with an easy way to manage all your trained Neural Networks for ease of future predictions. You can choose to embed the Neural Network directly into your Excel workbook, so that it is saved with the workbook. Or, you can choose to store the Neural Network in its own file, independent of any Excel workbooks. Regardless of how you save your Neural Networks, the NeuralTools Neural Network Manager allows for easy navigation and identification of multiple Neural Networks trained on a single dataset.

The Best in Data Management

NeuralTools provides a comprehensive dataset and variable manager right in Excel, just as you would expect from a stand-alone Neural Networks package. You can define any number of datasets, each with the variables you want to analyze, directly from your data in Excel. NeuralTools intelligently assesses your blocks of data, suggesting variable names and data locations for you. It detects whether variables are categorical or numerical. You can even flag variables in your dataset as ones that will not be used. The information stored in the Dataset Manager can be sent to another user by sending the file to them, and they can easily see which variables were used in the training of the Neural Network. Your datasets and variables can reside in different workbooks and worksheets, allowing you to organize your data as you see fit. You can train your Neural Networks with ease each time instead of re-selecting your data over and over again in Excel. And NeuralTools variables aren't limited in size to a single column of data in an Excel worksheet. You can define a variable that spans multiple worksheets, allowing up to 65,535 X 255 cells, or over 16 million cases for a single variable!

NeuralTools Features and Benefits

Features	Benefits
Better predictions faster	Save time and make better decisions
Automatically trains, tests, and predicts in one easy step	Saves time and hassle in setting up analyses
Live Prediction feature automatically updates predictions when input data changes (Professional edition only)	No need to manually re-run predictions as conditions change
Can train and analyze data spanning multiple worksheets	Virtually unlimited analytical capacity
Cases in a dataset can be automatically or manually tagged for training, testing, and prediction data	Saves time and hassle setting up analyses, while allowing for customization
Variable matching – variables in the different datasets (training, testing, and prediction) do not need to be in the same order or even have the same names	No hassle managing various datasets
Neural Networks Manager for easy management of many trained Neural Networks	Keeps Neural Networks organized for quick retrieval
Save Neural Networks in workbooks or as native NeuralTools files	Allows flexibility to use trained Neural Networks on multiple spreadsheets
Can be used for both categorical and numeric data	Maximizes the range of problems that can be analyzed
No need to create dummy variables for categorical data – NeuralTools automatically interprets categorical data directly	Saves time and improves clarity
True add-in, featuring Excel-style functions, toolbar interface, menu, and Excel commands	Intuitive and easy to learn
Graphs and reports customized using standard Excel features	Tremendous variety of reporting options to meet any presentation needs
Designed to work with StatTools, @RISK, Evolver and other Palisade products	Combine analysis with other techniques

The Best of Excel

Reporting

Excel is great for reports and graphs, and NeuralTools makes the most of this when creating reports. NeuralTools uses Excel-format graphs, which can be easily customized with new colors, fonts and added text. Report titles, number formats and text can be changed as you do in Excel. You can even take your reports from Excel into other applications.

Data Access

Excel has great data import features, so bringing your existing data into NeuralTools is easy! Use standard Excel capabilities to read in data from a database, text file or other application. If you can read it into Excel, you can use it with NeuralTools!

File Sharing

NeuralTools saves all its results and data in Excel workbooks, so you can send your NeuralTools results and data to colleagues anywhere. It also allows you to save trained Neural Networks to files external to Excel. Sharing is easy!

Two Editions to Meet Your Needs

NeuralTools comes in two editions: Standard and Professional. The Standard edition allows up to 1,000 cases per dataset, and the Professional edition has unlimited capacity. The Professional edition also adds Live Prediction, whereby the predicted result is updated automatically when the input data changes.

Related Products

Enhance and expand the power of NeuralTools with these tools from Palisade:

StatTools

Advanced statistical analysis right in Excel.

DataXXL

Expand and enhance Excel's data management capabilities.

NeuralTools – Built on a History of the Best Add-in Technology

NeuralTools is a product of Palisade Corporation, the leader in decision and risk analysis add-in tools for Microsoft Excel. Palisade's products include the world's most popular risk and decision analysis packages, **@RISK** and the **DecisionTools Suite**. Rounding out the product line are the advanced statistics add-in to Excel **StatTools**, the cutting-edge optimizers **RISKOptimizer** and **Evolver**, along with **programming toolkits** which utilize Monte Carlo simulation, optimization and other techniques.



Order NeuralTools Now!

Desktop Price Including 12 Months Maintenance

Version

NeuralTools Standard	\$495
NeuralTools Professional	\$795

All prices include one year of maintenance. Maintenance includes free, unlimited technical support and free version upgrades.

Network, volume, and academic pricing are available.

System Requirements: Microsoft Windows 2000 or higher, Microsoft Excel 2000 or higher.

Demo: Free demo CD available.