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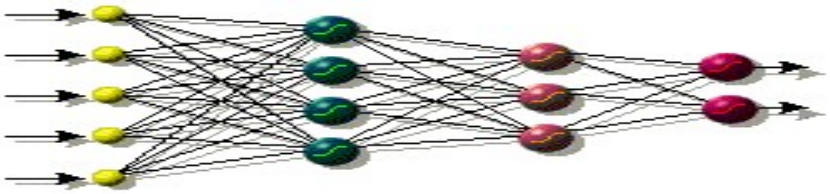
NeuralScope - Version 17 Release 7, for TradeStation with NinjaTrader Multi-Broker Interface:

First of all, let us at C.A.T - NeuralScope, thank you for considering NeuralScope as your trading strategy of choice. NeuralScope is currently available for TradeStation, plus offers the NinjaTrader Multi-Broker interface, with fills averaging less than 0.01 of a second. NeuralScope is a revolutionary, cutting edge development in Forecasting Science. NeuralScope is a Genetic Adaptive General Regression Neural Net, based on a advanced Genetic Algorithm, which offers cognizance and adaptability in its detection of patterns within the symbol spectrum. NeuralScope continues to grow in popularity and has been utilized in over 75 countries around the world and is the system of choice for many traders.



The following is an brief understanding of how a
Neural Net pattern formation is created in NeuralScope.

In the above image, the neural net is constructed of
Inputs = **Y** x Hidden Layers = **X**
(With Hidden Layers equal to 2 x Square Root of the Inputs) = [2x√**Y**]= **X**
In the above example, although not fully illustrated
the same as in NeuralScope, due to space constraints.

Then we use half of these as the other half are just the opposite sign.
[Inputs = **5** x (2 x Square Root (Hidden Layers) = **4.47**)]
= [5**Y** x 4.47**X**] = 22.35!
½ (22.35!) = 11.18!
= **11.18!** (Permutations)

With every **Input** Inter-connected to every Hidden Layer node
which is in this case, equals 11.18 Factorial or
represented as 11.18! which is equal to 39,916,800
connection nodes for this small Net.

NeuralScope Inputs, usually range between 50 and 100,
dependent upon the study, time scale and bar size being forecast.
So you can understand the enormous mathematical matrix that is
created and used as a pattern model.

A 50 input Neural Net would equate to 707! or 2.075762585 E+1709
and a 100 Input Neural Net would equate to 2000! or 3.316275092 E+5735 or roughly a 6000 digit number.

Why do we do this you may ask? To mimic the way the human brain works! When a baby is conceived in the womb, they start development with approximately 100 Billion synoptic connections nodes or neurons, which will grow exponentially by the time they are actually born at 9 months and continue to grow exponentially into their late teens and early twenties or until they reach adulthood and their body has fully developed. And as far as we know now, may even continue to grow throughout their lifetime. We are only just being able to start to be able to map the human brain and already we have found this to be a monumental task due to the brains complexity and amount of synoptic neuron connection nodes.

So, how does NeuralScope work? Very simply put, just like the Human Brain does. Maybe "simply" is not the best word usage here considering the above example, as NeuralScope's, Artificial Intelligence, as well as the Human Brain are extremely more complex, than just " simply ". So how does NeuralScope work? When NeuralScopes Neural Net has learned patterns over a specific historical spectrum of symbol data, it creates a model. It then is able to identify through very complex matrix mathematics, (see above), re-occurrences of events from patterns which are stored, just the same as the human brain stores memories. For example; lets say that you touch something that is very hot, the activity passes from the sensors in your fingers to the synopsis of your brain in a fraction of a second via neural pathways and the event is also stored for future reference, while an immediate reaction is issued to pull your hand away from the impending danger. The next time you encounter this or a similar event the stored information is recalled and a warning from your brain is initiated, thus alerting you, when considering touching this item. This is known as the learning and recollection process. The same works with a Neural Net. Multi Dimensional Patterns are learned which exist in the Symbol Spectrum very similar to Fractal Patterns. A Fractal is a Pattern within Chaos. Snowflakes, Leaves and many natural components around us offer a form of natures Fractal Patterns. The symbol spectrum is very much the same and although there are infinite patterns and cyclic activity within a chaos spectrum, the spectrum itself is finite and we are able to identify and extract multi dimensional patterns that are meaningful enough, while ignoring noise on the spectrum base and identifying multi dimensional patterns, that are able to assist us in our decision making, thus reducing the error scientifically and systematically, remembering that the ability to remove the error totally is at the moment impossible. NeuralScope looks inside the spectrum at billions of permutations and millions of patterns in a split second, through complex matrix mathematics and makes forecasts with an extraordinary high degree of confidence. Confidence is measured in Correlation Coefficient and R^2 values of prediction capabilities learned for actual future events. NeuralScopes underlying matrix mathematics is extremely powerful, and offers correlation on, learning history verses prediction actual, with very high Correlation Coefficient and R^2 values. When certain criterion is met an order is initiated for you to submit your trade to the appropriate arena. The Exiting strategy performs additional observations. As market conditions change very rapidly, NeuralScope takes into account several blended incremental exit scenarios, concurrently. From Reverse Net Predictions to various Capture/Exit Stops!

NeuralScope also offers a protective per trade Stop Loss to help in protecting you from an uncontrolled loss and assisting in Money Management. Or you my turn all NeuralScope Stops off and utilize TradeStation, and/or your own. NeuralScope is fully automated and can be set to trade directly without any human intervention within TradeStation for equities and NinjaTrader for the Forex.

Additionally NeuralScope will allow you to plug in any developed spectrum patterns and prediction lengths, allowing you to have a broad usage in your trading efforts. Currently NeuralScope is being offered with a wide range of Neural Nets, however, our Staff are always developing additional Neural Nets for other major symbols. As these Nets are developed they are made available to you without any further obligations for as long as you are a NeuralScope subscriber. Also a Net may even be created exclusively for your special requirements and custom symbol preference, parameters and usage. Please contact us for more information on this.

One of the most difficult challenges in trading is to achieve a correctly balanced Loss/Win Ration and so that you are not progressively digging yourself into a financial hole. This is why systematic trading is the best way, so you remove human emotional factors and maintain a consistent ratio and insure that your losses are not exceeding your wins overall.

Minimum System Requirements:

With Neural Nets due to the enormous mathematical processing involved, it is recommended that you operate the **fastest, most powerful computer possible**. NeuralScope will operate on a standard PC, however it is recommended for it to be continuously the fastest possible PC for the best possible trading results. Although NeuralScope will operate on any Windows PC, the faster the better. Again this is true for your Internet connection speed. A solution to this is to have a VPS, Virtual Private Server located on or near the exchange for which you are trading. These are radially available at a reasonable cost.

It is also assumed here, that you are familiar in the operations and navigation of a Windows platform and that of the TradeStation Software.

Installation and Operation Guidelines:

This is as easy as it gets. There isn't really a lot to setting up to begin using NeuralScope. You must run the NeuralScope-Setup install program; this will automatically place the appropriate nets to your systems directory and the Program into your TradeStation platform. Open the pre-developed NeuralScope Desktops and Workspaces for assistance in getting started quickly.

After which you are ready to start using the system immediately. You will only need to input your respective system parameters when you insert the strategy into a chart. See the **Strategy Inputs Section**, below. Remember to save your Workspace before you close it out so as not to have to re-input the system parameters again the next time you open up the Desktop and Workspace. Each Net has an associated PDF with both required and example learned parameters. Your user reoccurring passcode will be issued to you via a separate email.

Please note that Back-Testing over a period is extremely time consuming. Converting History into Real-Time will take considerable time and computer power. For example, to Back-Test the Net over one day or 405 Bars of history S&P 500 1 Minute data, takes approximately 3 minutes on a Computer with a Pentium II, 2.6 GHz CPU and 512 MB Ram and this will decrease exponentially, when a more powerful platform is utilized. So if you wish to Back-Test a Net over several days you must be patient. Remember, your computer will be utilizing all its power to process this. Take a look at the Performance in your Windows Task Manager. This will help in trying to find the best and fastest computer hardware for this process. Firing NeuralScope Real-Time, is just that, (Real-Time) and all operations are instantaneous, to the fraction of a nanosecond. Here is an interesting video of Grace Hopper explaining Nanoseconds, Grace Hopper - Nanoseconds explains: https://www.youtube.com/watch?v=JEpsKnWZrJ8.

At the Tick resolution level the processing requirements are magnified again exponentially. Due to the enormity of the problem, you should never Back-Test more than a few days at the tick resolution level at a time, unless you have a very very powerful computer. With the Print Log turned on and while in Back-Testing mode, you will receive at the end of the PrintOutLog a report on Back-Testing Beginning and Ending Date and Times required to process. Based on these you can review the CPU time requirements for a particular time period. Neural Nets require the most memory and processing power. You need to also consider your Internet speed and router contention rate from your Internet service provider. All these elements are a factor in Real-Time verses Near-Real-Time and critical for you as a Trader. Anti-Virus and Firewalls, although a very important necessary, may also impact your computers speed.

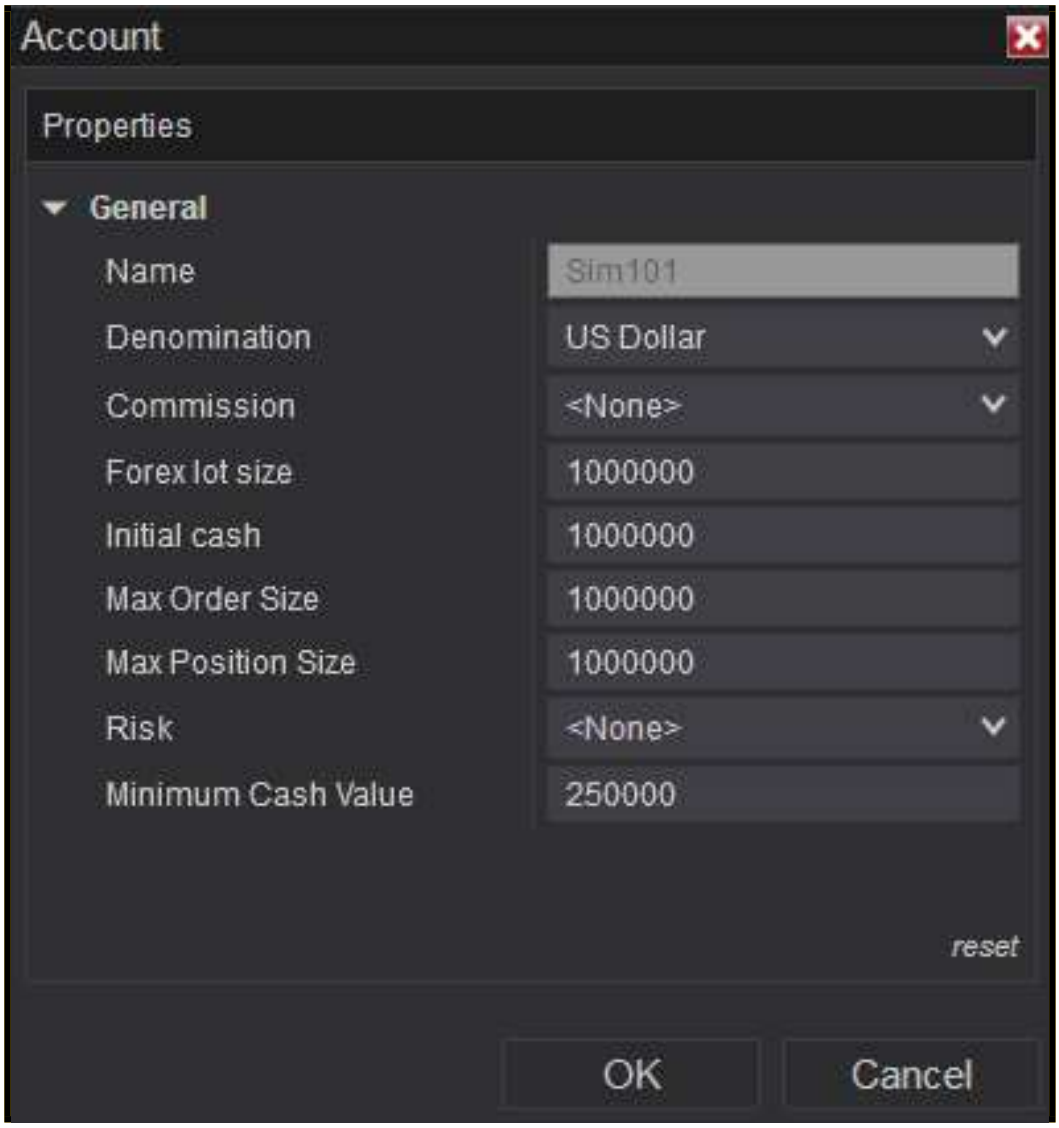
System maintenance is imperative. You may wish to try a free product called "Ccleaner" by Piriform. This is a great Memory and Registry cleaning software for Windows and is rated very highly. It can be downloaded at https://www.piriform.com/ccleaner/download. Another great product is "Wise Registry Cleaner Free" by Wise, http://www.wisecleaner.com/wise-registry-cleaner.html It is very important to continually maintain your systems platform at all times. Additionally, running any other programs during your trading session is something you need to seriously consider. This includes any browsers, email clients and also, although important to be protected, antivirus software. It is recommended that you spend the time each day prior to trading doing system maintenance. You should also not let your trading system run endlessly without stopping it and closing out of everything in which to prevent memory bloat. There is no standard rule here, it is dependent upon your computer and its memory configuration. Another great add-in for your TradeStation platform is: JAM GVStratControl at http://www.jamstrategytrading.com/TS-U-GVStratControl.htm.

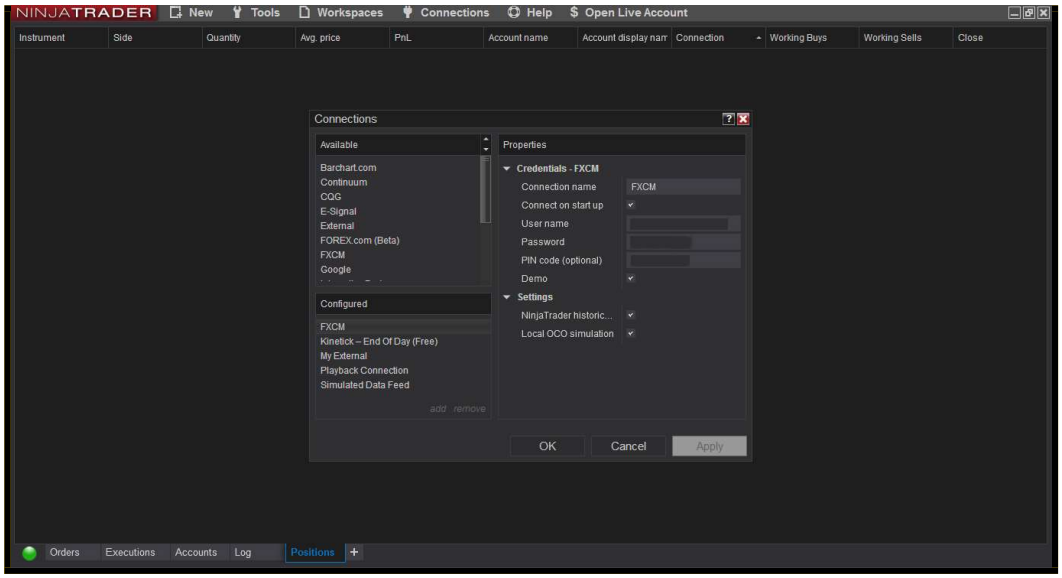
During the NeuralScope-Setup you will be taken to TradeStation automatically to Import the NeuralScope Strategy files into TradeStation. Also the Net-Parameter files link will be located on your Desktop. You will need to have Adobe Acrobat Reader or similar PDF viewer installed on your computer. Adobe Reader is available at www.adobe.com.

Now you are ready to start using NeuralScope. You now need to create a chart with at least three days of data in TradeStation for the appropriate symbol and resolution. Once you have the chart you only need to insert the trading strategy NeuralScope into the created chart and process. Easier yet, you may wish to uses our Desktops and Workspaces, already created and provide for you. This approach allows for a complete picture of the symbol and its activity while you trade.

If you are using the NinjaTrader Multi-Broker interface, you should start NinjaTrader 32bit version (not the 64 bit) as this is just unnecessary excessive overhead and higher data latency for nothing gained. Make sure you are using the same instrument and time frame bars as your TradeStation environment for which you are running NeuralScope on. Review the setup of the NinjaTrader interface below. Weather you are using NinjaTrader 8 or above, you must have NinjaTrader 7 installed on your computer, for the Application Programme Interface API to connect NinjaTrader with TradeStation.

NinjaTrader Configeration

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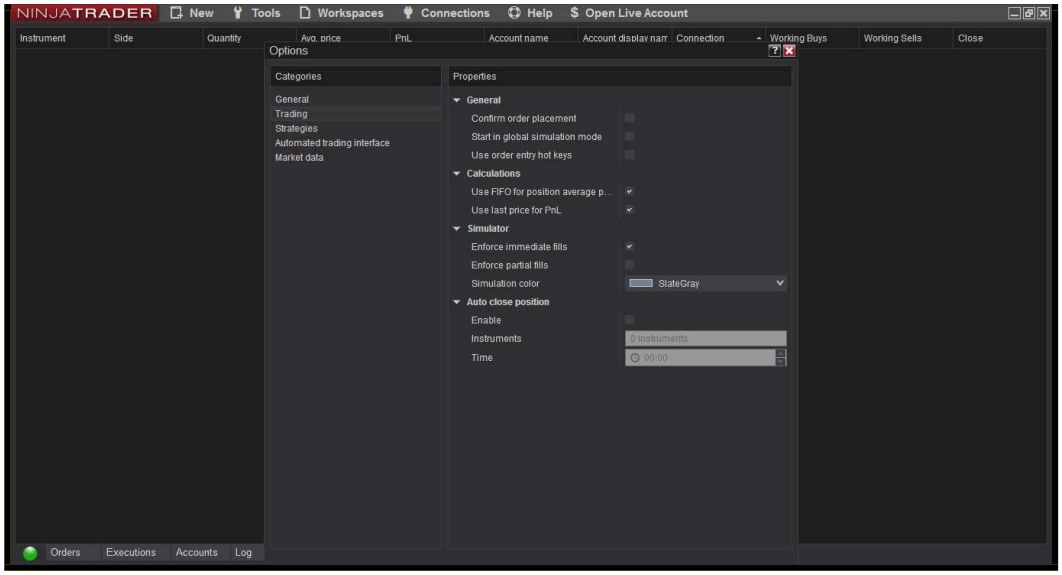
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Use order entry hot keys
Calculations
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Use last price for PnL
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Enforce partial fills
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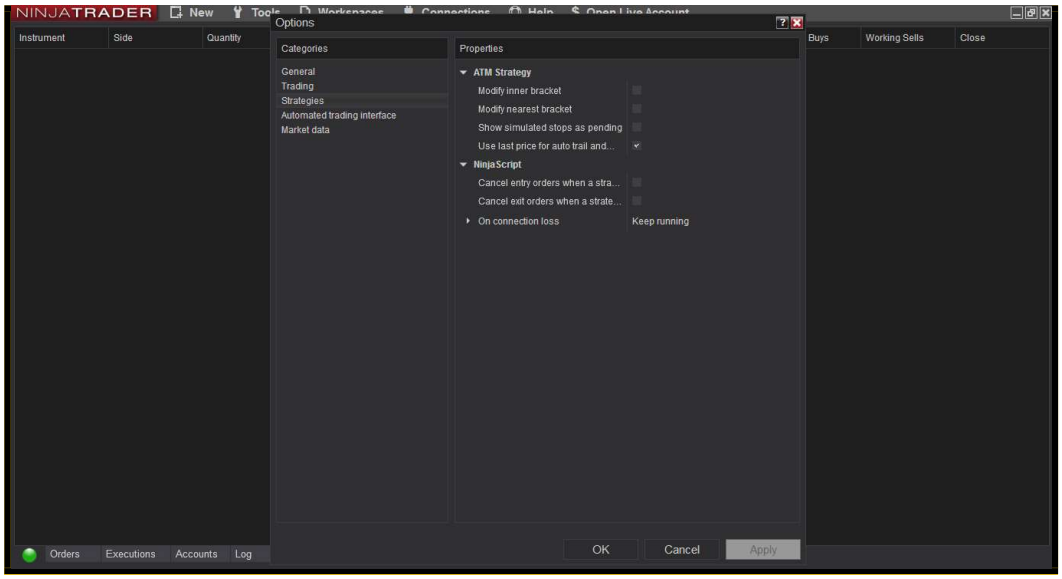
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Cancel exit orders when a strate...
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OK
Cancel
Apply
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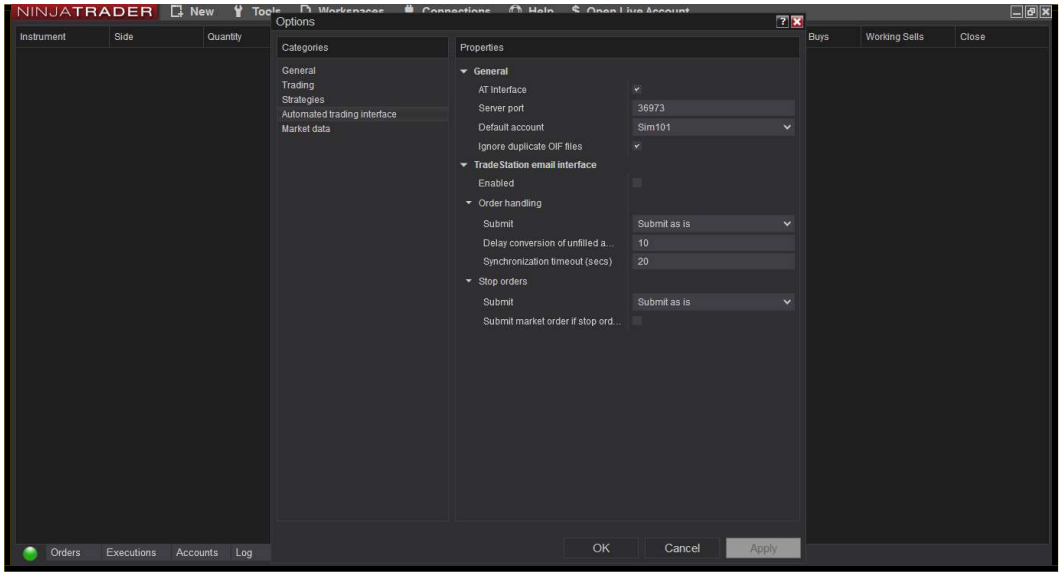
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Market data
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Server port
36973
Default account
Sim101
Ignore duplicate OIF files
TradeStation email interface
Enabled
Order handling
Submit
Submit as is
Delay conversion of unfilled a...
10
Synchronization timeout (secs)
20
Stop orders
Submit
Submit as is
Submit market order if stop ord...
OK
Cancel
Apply
Orders
Executions
Accounts
Log


C.A.T.™

Here is a very interesting YouTube video from Frances Hunt, Technical Analyst, Trader and Teacher who suggest and endorses pattern recognition and proper systematic trading, as the way of the future.

Francis Hunt - Systematic and Pattern Trading – YouTube:
https://youtu.be/gYLyRwStCxA

Published on 5 Jan 2015

90% of traders lose money... So how to be in the top 10%? Francis Hunt a technical analysis trader and coach comments. What are the bad habits to avoid? What are some trading mistakes to avoid? Is trading FOREX, Indices and Commodities a giant casino? Decide on a strategy that looks after all elements of money management. You've got to manage losses and you need to have a system that will make more money than it loses. Patterns are probably the most important technical analysis tool.

Here is the complete YouTube video series of Frances Hunt:

Francis Hunt - Trading Video Series on YouTube:
https://youtu.be/jM_fx-JTdpY?list=PLnSelbHUB6GT9L_TanRe_sya0CV5_QHW-

User Interface & Strategy Inputs:

There are 90 Inputs within 5 Sections. Within the each Sections and also across Sections, NeuralScopes inputs work in relationship or harmony with the other. This is important to remember when you make adjustments or optimize. NeuralScope comes with example preset default values that have provided very good results. The values are available in order to simplify the process a little for you, but are also flexible enough for you to optimize or select your own values. Explore the possibilities for variation of the Modeling. Remember past results are not indicative of future gains.

Warning and Note: **Real-Time and Automated Trading Execution:** It is very important that you ensure that the connection to the NinjaTrader platform is active prior to engaging NeuralScope. To make this possible, we have included a separate application named NTExternalFeed © NinjaTrader to check and insure that your remote data feed is active. This will insure that the NinjaTrader and FXCM are active. It is best that after you have launched both NinjaTrader and TradeStation NeuralScope platforms, that you status on the NTExternalFeed first and foremost prior to starting your trading engine.

Also, for best performance, you should only engage NeuralScope outside of the scheduled trading Start_Time. For example, if you with to start trading at 0600 and you are using 15 min Bars, you should engage (Status On), NeuralScope at least 30 minutes before, or by 0530.

You should also and it is equally important that if you interrupt trading during the active session, that you reset the the Start_Time to begin at least 30 minutes past current Time when interrupting trading during the active session.

For example, if Current Time is 0600, then set Start_Time to 0630. Remember, if your Data is set to Exchange Time to calculate the correct time as the Start_Time refers to the Data series Time. If you disengage (Status Off), NeuralScope for any reason, you should adjust the Start_Time to at lease 30 minutes past current Time, prior to re-engaging (Status On), NeuralScope again. This will prevent the system calculating and exacting for and during the current bar build, which may see significant slippage.

Strategy Input	*Category*	*Description & Definitions*
Strategy_Name	Strategy Identity Default = NeuralScope Strategy Name	This is the Name to identify the system in the printout log. This may be any name you wish! Remember to include the double quote marks at beginning and end.
Section_1_Strategy_Criteria	"**********"	This is a separator and is only for visual purposes.
Pass_Code	Security (24 inputs) Default=xxxx-xxxx-xxxx-xxxx-xxxx-xxxx	This is a Generated License Code issued by NeuralScope to authorize its usage. Call 1-877-GOTO-CAT or 1-877-468-6228
WinX64	Systems Criteria Systems Directory Architecture for Windows 32/64 Bit OS Default = 1	Value: = 0 or 1 0 = Windows 32 Bit 1 = Windows 64 Bit
NT_On_Off	Systems Criteria This is if you are using the NinjaTrader Multi-Broker interface. Default = 1	Value: = 0 or 1
NT_Net_On_Off	Systems Criteria This is if you are using the NinjaTrader Multi-Broker interface. Default = 1	Value: = 1 or 2 This is currently under development and therefore not fully implementated. You should use the Default of 1 for present.
Your_IP	Systems Criteria Default = xxx.xxx.xxx.xxx	Your computer IP connection address. This can be located by right mouse clicking on the network icon in the lower right area of your systems task bar and selecting Open Network and Sharing Centre. If you click on your Connections and select Details you will see your Ipv4 Address. This is your IP Address.
NT_Account	Systems Criteria Default = Sim101	Your NinjaTrader Account Number. Be careful that you are using the correct account and if you are using the Simulator that you are indeed and not live as Orders will be sent automatically to either of these.

NT_Instrument	Systems Criteria Default = GBPUSD	This is the Symbol Instrument you are trading in NinjaTrader
NT_API_WaitState	Systems Criteria Default = 0	Value: 1 to o~o Synchronization value = milliseconds This is a WaitState that can be used to adjust in an attempt to synchronize NinjaTrader with TradeStation. Do not be to concerned by this as you would prefer to be a quick in executing to your live trading arena as possible and synchronization two different data feeds and execution platforms is somewhat impossible.
TS_On_Off	Systems Criteria Default = 1	Value: = 0 or 1 This is to turn on and off TradeStation live trading for doing back-testing.
TS_Account	Systems Criteria Default = SimnnnnnnX	Your TradeStation Account Number Be careful that you are using the correct account and if you are using the Simulator that you are indeed and not live as Orders will be sent automatically to either of these.
TS_Instrument	Systems Criteria Default = GBPUSD	This is the Symbol Instrument of TradeStation
TS_SymbolCategory	Systems Criteria Default = Forex	The Symbol Category (Forex, Future, Equity)
Number_Contracts_Lots	Non FOREX Criteria Default = 100	Value: = 1 to 1000000 This refers to the number of traded contracts/lots. You must also Note: Insure that TradeStation values have also been set to match in strategy format area.
FX_On_Off	FOREX Criteria Default = 1	Value: = 0 or 1 0 = FOREX Mode Off 1 = FOREX Mode On
FX_Account_Lot_Size	FOREX Criteria Default = 1000000	Value: = 10000 or 10000000 This refers to the number of traded contracts/lots. You must also Note: Insure that TradeStation values have also been set to match in strategy format area.

Real_Time_On_Off ** When in Back-Testing mode, you will also need to Turn Off NT_On_Off, NT_On_Off = 0.	Back-Test/Real-Time Criteria Default = 1	Value: = 0 or 1 1 = Real-Time Mode 0 = Back-Test Mode
Section_2_Neural_Net_Criteria	"**********"	This is a separator and is only for visual purposes.
Net_Name	Net Definition Default = See Respective NET PDF	Value:= NetName The name of the Neural Net File to be executed. Remember to include the double quote marks at beginning and end.
XY_Neural_Net_On_Off	Entry Criteria This turns on of off the Neural Net Filter. Default = 1	Value: = 0 or 1 1 = Neural Net Mode On 0 = Neural Net Mode Off
XY_Net_Length	Net Parameter This is a matrix of all the possible permutations in the Net Length. Default = See Respective NET PDF	Value: 0 to o~o This is the Neural Net Tail Length and should only be changed to match the created Neural Net Tail Length. This is based on the Learned Dynamics of the Net. Science is discovery, however changing its value from the recommended in the Learned NET PDF, will change the Nets Learned Dynamics. This may render the Net invalid.
XY_Net_Dimension	Net Parameter Default = Close	This can be any makeup of the Bar Example Open, High, Low or Close and any combination there of. This is based on the Learned Dynamics of the Net. Science is discovery, however changing its value from the recommended in the Learned NET PDF, will change the Nets Learned Dynamics. This may render the Net invalid.

Fibonacci_Neural_Net_On_Off Fibonacci is detailed here: https://en.wikipedia.org/wiki/Fibonacci_number	Net Parameter Default = 0	Value: = 0 to 3 0 = XY Matrix 1 = Fibonacci Matrix 2 = XY Matrix + Fibonacci XY Matrix 3 = Fibonacci XY Matrix + XY Matrix This should only be changed to match the created Neural Net PreFibonacci Settings. This is based on the Learned Dynamics of the Net. Science is discovery, however changing its value from the recommended in the Learned NET PDF, will change the Nets Learned Dynamics. This may render the Net invalid.
Fibonacci_Net_Length	Net Parameter Default = See Respective NET PDF	Value: 0 to o~o This is the Neural Net Tail Length and should only be changed to match the created Neural Net Tail Length. This is based on the Learned Dynamics of the Net. Science is discovery, however changing its value from the recommended in the Learned NET PDF, will change the Nets Learned Dynamics. This may render the Net invalid.
Fibonacci_Net_Dimension	Net Parameter This is Element which the Fibonacci Analysis Technique is considered. Range = 1,2,3,5,8,13,21….o~o Default = See Respective NET PDF	Value: May be any TradeStation Value (Open, High, Low, Close or any TradeStation Function, for Example Lowest(Low,X), Average(Low,X) or Numeric Price Value. This should only be changed to match the created Neural Net PreFibAnalysisTech Settings. This is based on the Learned Dynamics of the Net. Science is discovery, however changing its value from the recommended in the Learned NET PDF, will change the Nets Learned Dynamics. This may render the Net invalid.
Prediction_Length	Net Parameter Default = See Respective NET PDF	Value: 0 to o~o This is the Neural Net Forecast Length and should only be changed to match the created Neural Net Tail Length. This is based on the Learned Dynamics of the Net. Science is discovery, however changing its value from the recommended in the Learned NET PDF, will change the Nets Learned Dynamics. This may render the Net invalid.
Section_3_Entry_Filters	"**********"	This is a separator and is only for visual purposes.

Prediction_Floor_Long Do not use inter-bar optimization for this value. Prediction_Floor_Long is only utilized at the Close of a Bar.	Net Parameter Watch the global fundamentals of the market and adjust accordingly. Default = See Respective NET PDF	Value: = 0.0001 to o~o This is a Floor noise filter for Long Trades, which will adjust sensitivity of detection level. 0.00001 very sensitive and 12.0 less sensitive and so on. When optimizing select progressive parameters. (Example: 0.0001 to 0.0005 Step 0.0001)
Prediction_Floor_Short Do not use inter-bar optimization for this value. Prediction_Floor_Short is only utilized at the Close of a Bar.	Net Parameter Watch the global fundamentals of the market and adjust accordingly Default = See Respective NET PDF	Value: = (-0.0001) to (–o~o) This is a Floor noise filter for Short Trades, which will adjust sensitivity of detection level. -0.00001 very sensitive and -12.0 less sensitive and so on. When optimizing select regressing parameters. (Example: -0.0005 to -0.0001 Step 0.0001)
NN_Adjustment This parameter allows for the Neural Net Decimal postion to be moved Left or Right	Net Parameter Default = 0; Represents Off with No Ajustement.	Value: = 0, 1 or 2 0 = Off and No Ajustement 1 = On with Movement of the Decimal Left 2 = On with Movement of the Decimal Right
NN_Adjust_Val This parameter allows for the Neural Net Decimal postion to be moved Left or Right X Value. (Example if the Neural Net is firing at 0.00020 and you want to move the Decimal position one place then you would use 10, two places 100, three places 1000, etcetera.	Net Parameter	Value: = 10 ~10000 10 = One Decimal place 100 = Two Decimal places 1000 = Three Decimal places 10000 = Four Decimal places
Prediction_Offset It is important to understand the Exchange Data Time Series relationship to that of the Prediction_Offset, when considering your Start_Time. For example: Prediction_Offset: 3 with 15 minute Bars, you wish to start trading (Start_Time) at 0630, then you will need to set your Start_Time to 0545. In this case 45 minutes in advance. Special Note: Additionally you will need to be turned on and activated prior to the Market Beginning Time to Present Time. In the above example of starting time of 0545, the actual market time must be before 0530.	Net Parameter Default = 0 ; Represents current Bar.	Value: = 0 to o~o This is the offset of the Bar. For example: Forecasting, 4 Bars into the future, Prediction_Offset: 3 would look at the previous 3 Bars Close for the Prediction. When this is set greater than 0, the Prediction is calculated only on the Offset Bar Close and not inter-bar as is when 0. Historical Bar do not contain inter-bar date or time stamps. This is not important as the Prediction/Prediction_Offset is only considered for entry of a position and is thus only calculated on the Close value of the previous Bar.

Prediction_Skew	Net Parameter Watch the global fundamentals of the markets and adjust the Skew accordingly. Maybe you wish to consideration predominantly Long trades, during an expected Bull market for the day Default = 0 Default = See Respective NET PDF	Value = -o~o to o~o This is used to intensify and modify prediction strength during trending markets by offsetting the Prediction_Floors by the Skew amount. Example1: When Prediction_Floor_Long is set at 0.0002 and Prediction_Floor Short is set at -0.0002 and Prediction_Skew is set at 0.0001 then Prediction_Floor_Long becomes 0.0003 and Prediction_Floor Short becomes -0.0001), making Short entries more likely. The same applies with the inverse usage. Example2: When Prediction_Floor_Long is set at 0.0002 and Prediction_Floor Short is set at -0.0002 and Prediction_Skew is set at -0.0001 then Prediction_Floor_Long becomes 0.0001 and Prediction_Floor Short becomes -0.0003), making Long entries more likely.
Market_Limit_On_Off Note: Limit criteria will only remain valued until the price moves away from Limit Entry request point by ½ of the Neural Net Prediction Forecast. NeuralScope will assume that the Market has moved on and therefore cancel the Limit Order. If Neural Net is turned to Off, then this consideration will remain valid until either filled or movement to new bar occurs without continued valued criteria.	Entry Criteria Default = 0	Value: = 0 or 1 0 = Turned Off 1 = Turned On This is to turn on or off the Market_Limit criteria.
Limit_Value_Long	Entry Criteria ** Works in conjunction with MarketLimit Default = See Respective NET PDF	Value: May be any TradeStation Value (Open, High, Low, Close or any TradeStation Function, for Example Lowest(Low,Range), Average(Low,Range) or Numeric Price Value.
Limit_Value_Short	Entry Criteria ** Works in conjunction with MarketLimit Default = See Respective NET PDF	Value: May be any TradeStation Value (Open, High, Low, Close or any TradeStation Function, for Example Highest(Low,Range), Average(Close,Range), or Numeric Price Value.

TS_Spread_Tolerance This is only calculated for Buying at Market and any Buy to Cover Market Stop. If you are Trading the FOREX you need to pay close attention to the Spread, as when you Buy or Buy to Cover, at Market, you will most likely receive the Ask price. This could result in an **ENORMOUS COST**. For example: Suppose you are trading 1,000,000 lots, on the GBPUSD, then a Spread of 10.0, or 0.00100 Fractional Pips, will cost you $1,000.00, where as a Spread of 2.6 will only cost you $260.00.	Entry Criteria Default = 0.00022 This value is printed in the Print Log.	Value = 0 to o~o This is the Spread (Ask – Bid). Bid is always the Close price. Ask is a Market variable created by Supply and Demand causing the price action.
TS_Spread_Length	Entry Criteria Default = 3 Default = See Respective NET PDF	Value = 1 to o~o This is the Length for Spread (Ask – Bid) average calculation.
NT_Spread_Tolerance This is only calculated for Buying at Market and any Buy to Cover Market Stop. If you are Trading the FOREX you need to pay close attention to the Spread, as when you Buy or Buy to Cover, at Market, you will most likely receive the Ask price. This could result in an **ENORMOUS COST**. For example: Suppose you are trading 1,000,000 lots, on the GBPUSD, then a Spread of 10.0, or 0.00100 Fractional Pips, will cost you $1,000.00, where as a Spread of 2.6 will only cost you $260.00.	Entry Criteria Default = 0.00006 This value is printed in the Print Log.	Value = 0 to o~o This is the Spread (Ask – Bid). Bid is always the Close price. Ask is a Market variable created by Supply and Demand causing the price action.
NT_Spread_Length	Entry Criteria Default = 3 Default = See Respective NET PDF	Value = 1 to o~o This is the Length for Spread (Ask – Bid) average calculation.
Volatility_Tolerance_Top	Entry Criteria Default = 0.0006 This value is printed in the Print Log. Default = See Respective NET PDF	Value = 0 to o~o This is the Volatility Top of the Average (Close) over the past " Volatility_Length " Bars.
Volatility_Tolerance_Bottom	Entry Criteria Default = 0.00003 This value is printed in the Print Log. Default = See Respective NET PDF	Value = 0 to o~o This is the Volatility Bottom of the Average (Close) over the past " Volatility_Length " Bars.

Volatility_Length	Entry Criteria Default = 3	Value = 1 to o~o This is the Volatility of the Close over the past x Bars.
TS_Volume	Entry Criteria Default: 150	Value = 0 to o~o This is the Volume of the Instrument with progression from Previous Volume. If Volume >= TS_Volume and Volume[1] > Volume[2]
Start_Date Insure that you have Symbol Data for the Start_Date range requested.	Back-Test Start Criteria Default = See Respective NET PDF	Value: = YYYMMDD The date to start processing on. Note: This has no effect in Real-Time Mode. Example 1160831 = August 31, 2016.
End_Date Insure that you have Symbol Data for the End_Date range requested.	Back-Test End Criteria Default = See Respective NET PDF	Value: = YYYMMDD The date to End processing on. Note: This has no effect in Real-Time Mode. Example 1011130 = November 30, 2001
Start_Time_1 The Times both Starting and Ending for all 4 timeframes, need to be in synchronisation with one other. ** Note All time are for the current Bar. For example if using 15 Min Bars, and you set the Start_Time to 0900, then NeuralScope will start calculating at 0845 when the 0900 Bar begins to build.	Back-Test/Real-Time Start Criteria Default = 0000	Value: = 0000 to 2359 **(Must be lesser than End_Time)** The time in which to start trading. This must be the local time (or exchange), that you trade. Your Systems Clock related to Exchange.
End_Time_1 Note: Keep in mind the closing market time for your respective market and set this accordingly. You want to ensure that you are out of the market before the end of trading time. A good rule to follow is to be out 10 minutes prior to the end of the trading session to allow for fills and settlement prior to the close,	Back-Test/Real-Time End Criteria Default = 2359 NeuralScope will flatten everything 10 minutes prior to End_Time is which to ensure that you are out of the market prior to any market closing times.	Value: = 0000 to 2359 **(Must be greater than Start_Time)** The time in which to end trading. This must be the local time (or exchange), that you trade. Your System Clock related to Exchange.
Start_Time_2 The Times both Starting and Ending for all 4 timeframes, need to be in synchronisation with one other. ** Note All Times are for the current Bar. For example if using 15 Min Bars, and you set the End_Time to 2200, then NeuralScope will stop calculating at 2145 when the 2200 Bar begins to build.	Back-Test/Real-Time Start Criteria Default = 0000	Value: = 0000 to 2359 **(Must be lesser than End_Time)** The time in which to start trading. This must be the local time (or exchange), that you trade. Your Systems Clock related to Exchange.

End_Time_2 Note: Keep in mind the closing market time for your respective market and set this accordingly. You want to ensure that you are out of the market before the end of trading time. A good rule to follow is to be out 10 minutes prior to the end of the trading session to allow for fills and settlement prior to the close,	Back-Test/Real-Time End Criteria Default = 2359 NeuralScope will flatten everything 10 minutes prior to End_Time is which to ensure that you are out of the market prior to any market closing times.	Value: = 0000 to 2359 **(Must be greater than Start_Time)** The time in which to end trading. This must be the local time (or exchange), that you trade. Your System Clock related to Exchange.
Start_Time_3 The Times both Starting and Ending for all 4 timeframes, need to be in synchronisation with one other.	Back-Test/Real-Time Start Criteria Default = 0000	Value: = 0000 to 2359 **(Must be lesser than End_Time)** The time in which to start trading. This must be the local time (or exchange), that you trade. Your Systems Clock related to Exchange.
End_Time_3 Note: Keep in mind the closing market time for your respective market and set this accordingly. You want to ensure that you are out of the market before the end of trading time. A good rule to follow is to be out 10 minutes prior to the end of the trading session to allow for fills and settlement prior to the close,	Back-Test/Real-Time End Criteria Default = 2359 NeuralScope will flatten everything 10 minutes prior to End_Time is which to ensure that you are out of the market prior to any market closing times.	Value: = 0000 to 2359 **(Must be greater than Start_Time)** The time in which to end trading. This must be the local time (or exchange), that you trade. Your System Clock related to Exchange.
Start_Time_3 The Times both Starting and Ending for all 4 timeframes, need to be in synchronisation with one other.	Back-Test/Real-Time Start Criteria Default = 0000	Value: = 0000 to 2359 **(Must be lesser than End_Time)** The time in which to start trading. This must be the local time (or exchange), that you trade. Your Systems Clock related to Exchange.
End_Time_3 Note: Keep in mind the closing market time for your respective market and set this accordingly. You want to ensure that you are out of the market before the end of trading time. A good rule to follow is to be out 10 minutes prior to the end of the trading session to allow for fills and settlement prior to the close,	Back-Test/Real-Time End Criteria Default = 2359 NeuralScope will flatten everything 10 minutes prior to End_Time is which to ensure that you are out of the market prior to any market closing times.	Value: = 0000 to 2359 **(Must be greater than Start_Time)** The time in which to end trading. This must be the local time (or exchange), that you trade. Your System Clock related to Exchange.
Bollinger_Band_On_Off Bollinger Bands are detailed here: https://en.wikipedia.org/wiki/Bollinger_Bands You are able to visualize this, using the TradeStation Indicator on the Chart with the same values, as the Math is identical.	Entry Criteria Entry Filter Optimizable Breakout, with one bar conformation. This is not reversal considered. Default = See Respective NET PDF	Value: = 0 or 1 0 = Bollinger_Band Off 1 = Bollinger_Band On. Bollinger Bands® are the Registered Trademark of John Bollinger, who developed them
Bollinger_Length	Entry Criteria Default = 20	Value: = 0 to o~o

Bollinger_Top	Entry Criteria Default = 2 Sets the number of standard deviations above (positive) or below (negative) the center-line average.	Value: = 0 to 10 Bollinger Band Over Bought
Bollinger_Bottom	Entry Criteria Default = -2 Sets the number of standard deviations above (positive) or below (negative) the center-line average.	Value: =- 0 to - 10 Bollinger Band Over Sold
MACD_On_Off You are able to visualize this, using the TradeStation Indicator on the Chart with the same values, as the Math is identical.	Entry Criteria Default = 0	Value: = 0 or 1 0 = MACD Off 1 = MACD On.
MACD_Length MACD is detailed here: https://en.wikipedia.org/wiki/MACD	Entry Criteria Default = 26 This is a Cross Over and Cross Under filter	Value: = 0 to o~o Buy Signal: (MACD > MACD Average) And (MACD[1] < MACD Average[1]) Sell Signal: (MACD < MACD Average) And (MACD[1] > MACD Average[1])
MACD_Fast	Entry Criteria (Close, MACD_Fast) (Entry Filter) Default = See Respective NET PDF	Value: = 0 to o~o This is a Fast Moving Average.
MACD_Slow	Entry Criteria (Close, MAcd_Slow) (Entry Filter) Default = See Respective NET PDF	Value: = 0 to o~o This is a Slow Moving Average.
ParaBolicSAR_On_Off Parabolic SAR is detailed here: https://en.wikipedia.org/wiki/Parabolic_SAR You are able to visualize this, using the TradeStation Indicator on the Chart with the same values, as the Math is identical.	Entry Criteria Default = See Respective NET PDF	Value: = 0 or 1 0 = ParaBolic Off 1 = ParaBolic On

ParaBolicSAR_Step	Entry Criteria Default = See Respective NET PDF	Value: = 0 to o~o This is a Range (+/-) from the previous Close in which the Parabolic calculation can be offset.
ParaBolicSAR_Limit	Entry Criteria Default = See Respective NET PDF	Value: = 0 to o~o This is the Length of the number of Bars to consider in the Parabolic calculation.
ParaBolicSAR_Variance	Entry Criteria Default = See Respective NET PDF	Value: = 0 to o~o Sets the acceleration factor increment, generally set to 0.02.
RSI_Length You are able to visualize this, using the TradeStation Indicator on the Chart with the same values, as the Math is identical.	Entry Criteria Default = See Respective NET PDF	Value: = 0 to o~o
RSI_Top	Entry Criteria (Entry Filter) Optimizable Default = See Respective NET PDF	Value: = 0 to 100 This is the Relative Strength for Over Bought market conditions. Filters entries Short. To turn this OFF set value to 0
RSI_Bottom	Entry Criteria (Entry Filter) Optimizable Default = See Respective NET PDF	Value: = 100 to 0 This is the Relative Strength for Over Sold market conditions. Filters entries Long. To turn this OFF set value to 100
Stochastic_On_Off Stochastic is detailed here: https://en.wikipedia.org/wiki/Stochastic_process You are able to visualize this, using the TradeStation Indicator on the Chart with the same values, as the Math is identical.	Entry Criteria This is a Cross over and Cross under filter Sell Signal: (FastK < FastD) and (FastK[1] > FastD[1]) Buy Signal: (FastK > FastD) and (FastK[1] < FastD[1])	Value: = 0 or 1 0 = Stochastic Off 1 = Stochastic On
Stochastic_Length	Entry Criteria Default = See Respective NET PDF	Value: = 0 to o~o Sets the number of bars to consider
Stochastic_Smoothing_FastK_Length	Entry Criteria Default = See Respective NET PDF	Value: = 0 to o~o Sets the constant for smoothing the fast K

Stochastic_Smoothing_FastD_Length	Entry Criteria Default = See Respective NET PDF	Value: = 0 to o~o Sets the constant for smoothing the fast D
Stochastic_Over_Bought	Entry Criteria Default = See Respective NET PDF	Value: = 0 to 100 Stochastic_Over_Bought
Stochastic_Over_Sold	Entry Criteria Default = See Respective NET PDF	Value: = 100 to 0 Stochastic_Over_Sold
Section_4_Stops_and_Exits	"**********"	This is a separator and is only for visual purposes.
Accelerated_Profit_Floor_Long ** This procedure is an exponential closing loop, which closes the gap between a trailing stop and the equity profit curve. Created by Terry L Cooper © 1996	Stop Criteria This is a component of the upper capture level Stop Default = See Respective NET PDF.	Value: = 0 to o~o This is the Long Floor of the Acceleration Stop. The Acceleration Stop Procedure is Started upon reaching this value in Long Positions. 0 will turn this stop off including all associations to it.
Accelerated_Profit_Floor_Short ** This procedure is an exponential closing loop, which closes the gap between a trailing stop and the equity profit curve. Created by Terry L Cooper © 1996	Stop Criteria This is a component of the upper capture level Stop Default = See Respective NET PDF.	Value: = 0 to o~o This is the Short Floor of the Acceleration Stop. The Acceleration Stop Procedure is Started upon reaching this value in Short Positions. 0 will turn this stop off including all associations to it.
Accelerated_Profit_Step_Long	Stop Criteria This is a component of the upper capture level Stop Default = See Respective NET PDF	Value: = 0 to o~o This is the Long Step of the Acceleration Stop. The Acceleration Stop Procedure is Incremented this value in a Long Position causing an exponential closure on the equity curve
Accelerated_Profit_Step_Short	Stop Criteria This is a component of the upper capture level Stop. Default = See Respective NET PDF	Value: = 0 to o~o This is the Short Step of the Acceleration Stop. The Acceleration Stop Procedure is Incremented this value in a Short Position, causing an exponential closure on the equity curve.
Accelerated_Profit_Retrace_Long	Stop Criteria Profit Stop This is a component of the upper capture level Stop Default = See Respective NET PDF	Value: = 0 to o~o This is the Long Retracement of the Acceleration Stop. The Acceleration Stop Procedure is Incremented this value in a Long Position causing closure on the equity curve.

Accelerated_Profit_Retrace_Short	Stop Criteria Profit Stop This is a component of the upper capture level Stop. Default = See Respective NET PDF	Value: = 0 to o~o This is the Short Retracement of the Acceleration Stop. The Acceleration Stop Procedure is Incremented this value in a Long Position causing closure on the equity curve.
Breakeven_Floor_Amt	Stop Criteria This is a Breakeven Stop Default = See Respective NET PDF	Value = 0 to o~o This is a Profit Target Stop 0 will turn this stop off including all associations to it.
Daily_Loss_Limit	Stop Criteria This is the Daily Stop Loss Amount Default = See Respective NET PDF	Value: = (-0) to (-o~o) This is the amount of loss (Less Costs) you willing to accept on a daily basis. (This is a negative value). 0 will turn this stop off including all associations to it. ** When reached all positions will exit and no further trades will be taken for the remainder of the day.
Daily_Profit_Target	Stop Criteria This is the Daily Stop Profit Target Default = See Respective NET PDF	Value: = 0 to o~o This is the amount of profit (Less Costs) you willing to accept on a daily basis. 0 will turn this stop off including all associations to it. ** When reached all positions will exit and no further trades will be taken for the remainder of the day.
Key_Reversal_Floor	Stop Criteria Default = See Respective NET PDF	Value: = 0 to o~o This is a Key Reversal Stop, Example (Highest High or Lowest Low for Last 2 Bars, and Close :Lower or Higher than Previous Close by KeyRevTop or KeyRevBottom. 0 will turn this stop off including all associations to it.
Key_Reversal_Top	Stop Criteria Default = See Respective NET PDF	Value: = 0 to o~o This is the Bar Band Width for the Close of the Higher than the Previous Close by this amount.
Key_Reversal_Bottom	Stop Criteria Default = See Respective NET PDF	Value: = 0 to o~o This is the Bar Band Width for the Close of the Higher than the Previous Close by this amount.
Money_Management_Stop	Stop Criteria This is the Stop Loss Amount Default = See Respective NET PDF	Value: = 0 to o~o This is the amount of loss (Less Costs) you willing to accept per trade.

Net_Reversal_Floor	Stop Criteria This is a Net Reversal Stop Default = See Respective NET PDF	Value = 0 to o~o This is the Net Reversal Stop Floor which allows for the Neural Net to Exit the Position when the Net receives a value > than the opposite direction Prediction Floor. 0 will turn this stop off including all associations to it.
Net_Reversal_Stop_Long	Stop Criteria This is a Net Reversal Stop Default = See Respective NET PDF	Value = 0 to o~o This is the Net Reversal Stop Floor which allows for the Neural Net to Exit the Position when the Net receives a value > than the opposite direction Prediction Floor. 0 will turn this stop off including all associations to it.
Net_Reversal_Stop_Short	Stop Criteria This is a Net Reversal Stop Default = See Respective NET PDF	Value = 0 to o~o This is the Net Reversal Stop Floor which allows for the Neural Net to Exit the Position when the Net receives a value > than the opposite direction Prediction Floor. 0 will turn this stop off including all associations to it.
Profit_Stop	Stop Criteria This is a Profit Target Stop Default = See Respective NET PDF	Value = 0 to o~o This is a Profit Target Stop 0 will turn this stop off including all associations to it.
Retrace_Floor_1 ** This procedure is a percent retracement trailing stop	Stop Criteria This is a component of the Low Range Stop. Default = See Respective NET PDF	Value: = 0 to o~o This is the Retracement Floor. 0 will turn this stop off including all associations to it.
Retrace_Floor_2 ** This procedure is a percent retracement trailing stop	Stop Criteria This is a component of the Mid Range Stop. Default = See Respective NET PDF	Value: = 0 to o~o This is the Retracement Floor. 0 will turn this stop off including all associations to it.
Retrace_Percent_2	Stop Criteria This is a component of the Mid Range Stop. Default = See Respective NET PDF	Value: = 1 to 100 This percentage is the amount you will Allow Retracement from the RetraceFloor.
Retrace_Floor_3 ** This procedure is a percent retracement trailing stop	Stop Criteria This is a component of the High Range Stop. Default = See Respective NET PDF	Value: = 0 to o~o This is the Retracement Floor. 0 will turn this stop off including all associations to it.

Retrace_Percent_3	Stop Criteria This is a component of the High Range Stop. Default = See Respective NET PDF	Value: = 1 to 100 This percentage is the amount you will Allow Retracement from the RetraceFloor.
Spread_Exit_On_Off If you are Trading the FOREX you need to pay close attention to the Spread, as when you Buy or Buy to Cover, at Market, you will most likely receive the Ask price. This could result in an **ENORMOUS COST**. For example: Suppose you are trading 1,000,000 lots, on the GBPUSD, then a Spread of 10.0, or 0.00100 Fractional Pips, will cost you $1,000.00, where as a Spread of 2.6 will only cost you $260.00.	Stop Criteria This is a Stop Exit based upon the Spread_Average. Remember during Back-Testing, No Spread is calculated and the Spread is = 0. You should take this into account when balancing your Back-Testing, for Buy or Buy to Cover, at Market, Trades.	Value: = 0 or 1 0 = Spread_Exit = Off 1 = Spread_Exit = On
Spread_Entry_PosCalc This adds the Entry Spread onto the values for all Stop and Exit criteria.	Stop and Exit Criteria Example: Money Management Stop is set to 50.00. If the Entry Spread is 20.00, then the new Moneyment Stop is set to 70.00.	Value = 1 to 0 0 = Turned Off 1 = Turned On This is to turn on or off the Spread_Entry_PosCalc criteria.
Trailing_Stop_Floor ** This procedure is a trailing stop	Stop Criteria This is a component of the Full Range Stop. Default = See Respective NET PDF	Value: = 0 to o~o This is the Trailing Stop Floor. 0 will turn this stop off including all associations to it.
Trailing_Stop_Range	Stop Criteria This is a component of the Full Range Stop. Default = See Respective NET PDF	Value: = 0 to o~o This Range is the amount you will allow to give back from the maximum position profit after the floor value has been reached.
Section_5_Logs_and_Alerts	"**********"	This is a separator and is only for visual purposes.
Back_Test_Alarm_On_Off	Criteria ** Note: You may wish to change this sound to any sound you like by utilizing a wav file and renaming it to BackTestAlarm.wav and placing it into your C:\Program Files (x86)\NeuralScope V16R3\Sounds directory.	Value: = 0 or 1 0 = BackTestAlarm Off 1 = BackTestAlarm On

Print_Out_Log_On_Off ** Note: Back-Test Beginning and Ending Date and Times Displayed at End of Log, when in Back-Testing mode. When an order is triggered, either a Entry or Exit, the information is sent to the print log for you to conduct further analysis. You may wish to search on "Placed" for Entry Trades or "Activated" for Exit Trades.	Criteria BT/RT: = Back-testing/Real-Time NN_Val_OS: = Neural Net Value of the Prediction_Offset. CP_OS: = Close[Prediction_Offset] F_Cast: = Forecast Volatility: = Volatility Spread Average: = Average((CurrentAsk-CurrentBid),Spread_Length) ** Note: The Spread determines the fill price when Buying, Buying to Cover, Money_Management_Stop, Retracement Stops and Trailing Stops from Short positions, as these are filled at Market and usually this is at the Ask Price. Additionally the Spread is only for reference and has no calculated effect on entry or exit. This is because the Ask is not available in Back-Testing mode as Ask values are not available historically. Bid values are the Close. When Ask values become available sometime in the future, we will add this criteria to NeuralScope as an entry/exit filter. Mkt_TM: = Data Market Time Mkt_Dtd: = Data Market Date F_Cast_Len: = Forecast Length Strategy_Name: = Strategy Name	Value: = 0 or 1 0 = Print Log Off 1 = Print Log On Note: To assist with computer performance speeds, you may wish to turn this feature < Off > during, back-testing or optimizing. < Plot on or off>
Plot_On_Off	Default = 1	This is the Plot of the NeuralScope Forecast and that of the Actual
Trade_Alert_On_Off	Default = 0	This is the Alert of the Trades when not running in real-time execution.
Notes: o~o Remember: " Entry Filters " work together. The more Entry Filters you employ, the more selective your trade entry will be or not at all.	=	This Symbol Denotes Infinity

Notes: Signal Entry Label http://traderssoft.com/wp/ts/software/software-ts9/ http://ninjatrader.com/support/helpGuides/nt7/?tradestation_integration.htm http://www.hypertrader.it/hyperorder.shtml http://www.tradebullet.com/user-guide/ higher latency	Info 2 Letter Abbreviation	BB = Bollinger Band MA = MACD NN = Neural Net PB = ParabolicSAR ST = Stochastic

Remember you may use any combinations of stops in which to accomplish your exit objectives. A " 0 " in the Floor of the Stop Unit will turn the respective stop activity Off entirely. Also you may use any combinations of entry filters as well and again a " 0 " in the On/Off area will render it inactive.

Special Note: The best way to trade NeuralScope is to utilize it as a guide while reviewing the big picture and Fundamentals of the symbol and always remembering, that you are attempting to predict and outcome of both present and futuristic chaos. Not totally impossible, just very, very difficult. Fundamentals play an important part and there is **NO**, 100 % absolute, guaranteed outcome and therefore, definitely **NO** 100 % absolute systematic approach to predicting it. What you are attempting to do however, is to reduce the prediction error, through a valid scientific modeling approach, and that is exactly where NeuralScope is able to assist you with its very powerful Neural Net Pattern Recognition. Then it is up to you with proper Money Management in relation to Risk to Reward. Trying to keep a ratio of 3 to 1. 3 losses + 1 Profit = a balance of 0 or better.

Back-Testing Error and Technology Slippage: TradeStation both offer a feature in which to turn on Look Inside The Bar. Due to this, Real-Time verses Back-Testing, at 1 tick resolution is more accurate to that of Real-Time minus Technology Slippage. TradeStation both offer look inside the bar Back-Testing and Intra-Bar Order Generation and Calculations with Tick resolution. When Back-Testing and recreating history the system will require extensive resources and time to perform this task, however, during Real-Time this is indeed Real-Time minus Technology Lag and calculations are performed instantaneously. Signals are issued real-time through tick by tick data calculations, as they occur within the manager and strategy tracking center, when the enabled window notification, is turned on. The actual listed entry or exit of a trade will only appear on the TradeStation chart after the close of the bar unless you have Intra-Bar order generation and calculation turned on, keeping in mind that some calculations on still only performed at the close of the Bar. It is always important to utilize the fastest possible computer and fastest data feed.

Very Important, Real-Time Automated Trading Execution: The best way to engage NeuralScope is outside of the scheduled trading Start_Time. For example, if Start_Time is set to 0600, you should, engage (Status On), NeuralScope, 5 minutes before, or by 0555. You can also reset the the Start_Time to 5 minutes past current Time. For example, if Current Time is 0600, then set Start_Time to 0605. Remember, if your Data is set to Exchange Time to calculate the correct time as the Start_Time refers to the Data series (Exchange/Local) Time.

NeuralScope's Forecast Plot: The value of NeuralScope Forecast is Plotted on your chart with the value printed in the Print Log when PrintOutLog is turned on. This is in the form of Moving Lines, (Green - Solid) and (Yellow - Dashed). The (Green) value (Forecast) is; Close[0] -/+ Neural Net Value[0] and (Yellow) value (Actual) is; Close[0] -/+ Neural Net Value[PredictionLength]. In essence, this is Green as the Forecast and Yellow the Actual that was predicted (Forecast_Length) Bars ago. Interesting pattern correlation! When the Forecast matches the Actual, in a symmetrical shift, the Neural Net is modeling the pattern very well. This is a continued study in Patterns, Cycles, Rhythm, Amplitude and Crossovers within Chaos! Observe the spectral dynamics and we welcome your comments or suggestions.

Neural Nets require the most memory and processing power. It is very important to continually maintain your systems platform at all times.

Synchronisation

One of the most important issues to consider when using automated trading is the issue of synchronisation between the local TradeStation and Easy Language machine and the remote platform. The local machine needs to know what the current position on the remote platform and whether orders have been hit in order to take the appropriate actions.

Synchronization Issues

There are always going to be problems with synchronization until we can communicate on the speed of light. For example when working a limit or stop order this order might be hit on TradeStation and not on the NinjaTrader platform or vice versa. If the data source in TradeStation is not the same as NinjaTrader then this will make this more of an issue. There are three basic ways of resolving synchronisation problems: TradeStation-centred, NinjaTrader-centred system and then that of NeuralScope-centred designs.

TradeStation-Centred Design

With a TradeStation-centred design you assume that TradeStation's view of the system is always right. Thus if you are filled on your limit order in TradeStation then this is the position that NinjaTrader should have. To ensure this you force the NinjaTrader position to be the same as the TradeStation one at the start of each bar. This will obviously sometimes cause slippage on trades when a limit wasn't quite reached in NinjaTrader but was reached in TradeStation. At the end of the bar the market may have moved away from the price again but nevertheless you force the trade at a worse price in order to ensure that the NinjaTrader position matches the TradeStation one. Because of this you typically want the bar size to be relatively small so that this correction doesn't happen to long after the event. If for example one were trading off 30 minute bars on the system one might set up a multi-data chart with 1 minute bars as the first data set and 30 minute bars as the second. The order levels are calculated off the 30 minute chart but implemented on the 1 minute chart with the NinjaTrader position being forced to that of the TradeStation at the end of each 1 minute bar.

NinjaTrader-Centred Design

With a NinjaTrader-centred design on the other hand you assume that whatever happens on NinjaTrader is correct. In such a case you retrieve the positional information from NinjaTrader and act on it according to what you find. For example you retrieve the current NinjaTrader position and decide what orders to work on the basis of what you have retrieved. Problems with this method may come about if for example orders are hit between the positional information being retrieved and it being acted on.

NeuralScope-Centred Design

With a NeuralScope-centred design you are running a strategy on the TradeStation platform, but utilizing the two different data feeds independently for position initiation and assessments. Therefore your results may be different due to the different data feeds and platform speeds. TradeStation offers a stable, high-end mathematical processing environment. This is required to run NeuralScope due to the enormity of the mathematics within NeuralScope, which is what NeuralScope offers. NinjaTrader offers excellent execution speeds. Together they are a robust, fast and advanced analytical combination, in which to perform balanced electronic trading.

You can see how variation data can be, through taking into account Internet Provider speed, CPU speed, Local Memory, Hard Drive speed and Applications Overhead.

If you uses a product called TeamViewer, www.teamviewer.com, and connect your computer with another computer on the internet (Friend, Fellow Trader, etcetera), that is utilizing the same parameters, i.e. Same version of TradeStation and NeuralScope, you will see how different this process actually is. Dependent upon the Internet Provider, Proximity to the Central Office for the area, Proximity to the Central Global Net Ring and subsequently, Proximity to the Exchange. A good solution to some of the problems associated to self systems management, (keeping everything up to date, regular system cleaning, internet provider speed), is to use a TradeServer. These are managed totally to maintain their performance and located near the Exchange. You run TradeStation and NeuralScope on a Virtual Server located at or near the Exchange. There are a number of these available.

For Real-Time trading and the speed required at all times from your Platform, you may wish to even change your process's to running at High or Real-Time. This can be done through Task Manager at the Administrator level and utilizing the Detail view Tab. Select the Process which you wish to change with the Right Mouse Click and select Set priority, High or Real time, OK. Although, a warning this could cause Platform stability issues, we have not found this to be the case. As long as you don't go crazy and up everything to Real time, you should be fine. This will keep the Process's at the forefront of the OS and Kernel. Recommend that you only up the TradeStation (Including TsRTA, ELIS and WHServer.exe) & NinjaTrader Process to High or Real time. It is not necessary to up the TSDev process which is the TradeStation Development Environment. Additional to these, we up the explorer.exe (NT Root) to High, dwm.exe (Desktop Windows Management) to High. If you discover others and improvements, we would be very happy to hear from you. Please email: neuralscopesupport@catech.com thank you. Remember Platform speed is one of the most critical elements in this massive equation. Even to the level of disabling, Firewalls and Anti-Virus during trading for the execution platform that is only connected to the TradeStation and NinjaTrader Platform. Remember do not run email clients or unprotected Browsers on your Trading Platform. This is a method for potential doom!

NOW, VERY IMPORTANT:

Warning!

Automated trading should never be left unsupervised while activated!

You should always have a Back-Up and Fail-Safe stratigies in place. Example:(Trade Desk direct contact telephone, alternative communications). You should never be unprotected, from an alternative method of communicating directly to the Trade Desk.

There could be occurrences of Platform, Data or Strategy failure, which could cause the systems to become desynchronised.

This could subsequently leave you fully exposed in open positions and at risk of serious losses. Observance is always required, for your safety, security and peace of mind.

Remember, you can always override NeuralScope and make direct trades, both in or out of the Market. This of course violates the systematic trading principals and rules, however, in times you may need to close a trade manually.

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