**What is your target function ?**

Hi,   
  
When I code an algorithm it usually go through 2 main steps:  
1 - I look at a bunch of deals/trade signals etc - trying to make the best on those trades  
2 - I than take the algorithm and make it manage a portfolio over time with risk management decisions and other real trading aspects.   
  
During optimization for each phase I need to decide on a target function to decide if algorithm A is better than B.   
  
Looking on the literature I was very disappointed with what I seen on this subject and wonder if you can offer something more interesting on the subject for both steps. Would be happy if you can direct me to a good literature on this subject and be more happy to see a real discussion on this matter on this board.   
  
[**Mark Brown mark@markbrown.com**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=56072165) • the problem i think is that "A" has to occur for "B" to even exist. so you have to first figure out how to run i guess two algo's one which is fake and hidden and one that is real and actually trading but being overridden and driven by the hidden system, this difficulty has kept many people involved in research from discovering great things. i would encourage you to continue your line of thought your on to something. ~m

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • ? I am sorry to say, I didn't understand your reply.   
Maybe my post wasn't cleared, I will give it another shoot -   
  
I have algorithm that I created   
  
Phase 1 - I run it over the history with an assumption I have unlimited cash.   
I than re-run several times each time with different set of parameters.   
  
Now for each run I have a bunch of details about its trades, and I need to pick the best one. What is the process you will do (Target function) to pick the best one?   
  
Next phase same story again but this time at a different level - After I find what set of parameters is the best to yield from each possible trade. I now run it without the unlimited money assumption, this time I manage a portfolio over time - I can't enter all trades due to limited money, I see the affect of the order of the trades in time, I have risk management consideration.   
  
Again in this phase, I have several parameters to test, I generate several runs and for each run get some results, this results have different data than former phase. Again I have to choose which set of parameters to take....   
  
So far, I didn't read yet about one target function that can give a good answer in any of those steps.

[**Mark Brown mark@markbrown.com**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=56072165) • phase 1) smoothness and consistent slope of equity curve will dictate best model parameter will not be most profitable or least profitable but one that is in the upper 65% range of all the parameters. that way you are giving up possible future profits in exchange for better dependability. by dumbing down the system a bit.  
  
phase 2) in a spreadsheet determine the quartiles of the positive and negative trades. this grouping will reveal much about the model. such as what is the average profit in the 75% range this would tell you that when you have a profit of 2x that amount you may wish to take profits or sell calls against a long position. enough can not be said about quartiles and what they can be used to reveal about a system.  
  
i hope this will help some please ask questions ~m

[**Erkan Sağlam**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=47014655) • If I understand your question correctly the profitability rule would be helpful . [http://www.priceactionlab.com/Literature/profitability.pdf](http://www.linkedin.com/redirect?url=http%3A%2F%2Fwww%2Epriceactionlab%2Ecom%2FLiterature%2Fprofitability%2Epdf&urlhash=MTX0&_t=tracking_disc" \t "blank) as well as the smooth slope of equity curve .

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Mark, thanks for the clarification, still few questions -   
  
By stating "Upper 65% range of all the parameters"   
What do you count as all parameters ?   
  
Note that if I look at more than 1 parameter, many times those parameters are not correlated in the same direction. I don't want to use fuzzy logic, in general I look for a target function that will have 1 figure to base my decision on.   
  
Phase 2,I 100% agree about the importance of quartiles, yet I didn't see it in literature too mcuh. Many time I prefer to look at the distribution directly in order to take decisions. I see you suggested a sell/call signal based on this, which is an interesting idea that I will think about, but off the shelf I think your rule might not meet all distributions and maybe its better to first know your distribution and generate a rule based on it in a more direct fashion.   
  
Last, I look for a function that would spit out 1 figure that you can base your choice off.   
Ran

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Erkan,  
  
Yep, what you sent me is the exact reason why I am disappointed with literature.   
I consider this as shallow and misleading, I really find it hard to think anyone serious really using any of this. (this is me being very gentle with my choice of words, as my feeling toward this is more harsh).

[**Mark Brown mark@markbrown.com**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=56072165) • Ran- lets say you have 100 parameters that make money. i would be hesitant to pick the most profitable parameter. i would not pick the middle either nor the lowest setting. i would pick a parameter which was about 65% between the 1 to 100 profitable parameters. ~m

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Mark - I agree that the most profitable system is not a good indicator, but I think just taking the 65% percentile solution is not a good indicator either. BTW, it is even not clear what do you mean by profitable.... profitable at the end of the run or highest pick during the run.   
  
As I wrote I usually work in 2 steps, at first step I don't have an equity curve just a bunch of trades. Lets assume you are discussing on the more advance step where I drive the algorithm in time and an equity curve can be seen for each run.   
  
How would you calculate the equity curve into into one number?   
  
I think I understand what you mean by suggesting the percentile, but I approach it differently, by doing sensitivity tests. Even this is not as simple as it sounds when you have an n-dimensional axis of parameters where each is on a totally different scale. This is again another example for something I failed to find in the literature.   
  
BTW: What Erkan sent me is the exact reason I opened this discussion. This kind of average win / average loss calculations are example to the poor solutions I find in the literature.   
  
I hope to find here some references to something completely different.

[**Mark Brown mark@markbrown.com**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=56072165) • so lets say a system is profitable with 10 settings - setting 1 it makes the least money and setting 10 it makes the most - i would choose setting 6 or 7 and not 10, certainly not 1. hope this helps explain what i mean. ~m

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • I disagree this is the way to choose your paramters set.   
I also noted it is not easy to define profitability well - how would you define profitability ?

[**Erkan Sağlam**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=47014655) • Mark,  
  
You said " So you have to first figure out how to run i guess two algo's one which is fake and hidden and one that is real and actually trading but being overridden and driven by the hidden system, this difficulty has kept many people involved in research from discovering great things.''  
  
And then you said '' lets say you have 100 parameters that make money. i would be hesitant to pick the most profitable parameter. i would not pick the middle either nor the lowest setting. i would pick a parameter which was about 65% between the 1 to 100 profitable parameters''  
  
I am confused:Is 65% range of all the parameters between the 1 to 100 profitable parameters related to the finding the fake and the hidden algo? If yes why is it 65% range ?Thanks.

[**Gary Kendall**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=1497429) • Ran, you ask an insightful question. It is particularly relevant for anyone using an automated optimisation procedure.   
  
I didn't think about this perhaps as much as I should, but I use the Sharpe Ratio as my target function. You can then adjust leverage according to your own risk preference.   
  
Mark's comments seem most relevant for an overparameterised system. My preference is to use as few parameters as possible.

[**Mark Brown mark@markbrown.com**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=56072165) • Erkan, using 65% approximately of the 1-100 profitable settings - that way you are giving up possible future profits in exchange for better dependability. by dumbing down the system a bit. its is also a number that is near the middle of the 3rd quartile which i have used allot. note that i did not arrive at this percentage out of thin air but rather 100mm man hours at a Cray T90 back in the day. ~m

[**Mark Brown mark@markbrown.com**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=56072165) • Gary - i would still pick 65% range of profitable inputs even if the model on had one optimizable parameter or one thousand. i typically keep my optimizable input parameters around one to four after my discovery phase. here is a picture of a very successful model that has only one optimizable parameter. ~m  
  
One parameter model   
[http://markbrown.com/linkedin/pics/linkedin08.png](http://www.linkedin.com/redirect?url=http%3A%2F%2Fmarkbrown%2Ecom%2Flinkedin%2Fpics%2Flinkedin08%2Epng&urlhash=NQlN&_t=tracking_disc)

[**Gary Kendall**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=1497429) • Mark, that's an interesting hypothesis. I will study my own walk forward performance to see if I concur.

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Gary,   
Yes, I spent hours on those issues, found literature model are not good, developed my own indicators which are still changing from time to time as I progress in better understanding of what I want.   
  
Regarding sharp ratio - I used it once just due to a client that asked what is my algorithm sharp...   
  
My question about sharp would be what R do you use?

[**Gary Kendall**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=1497429) • Mark, for my main strategy (where I am confident that I can model walk forward performance accurately) I found that walk forward efficiency crossed 100% at the 90th centile. For raw walk forward performance, the top centile was best.   
  
Considering Ran's original question, I'm sure that I would get very different results for a different objective function. I used the Sharpe ratio.   
  
On the interesting chart that you attached, would you care to give us any clues to the remarkable trend filter that you have found?

[**Gary Kendall**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=1497429) • Ran, for historical analysis I use overnight funding rates as my risk free. I got these from Reuters but you could no doubt find a free source. For my objective function, for backtests post 2009, I set the risk free rate to zero. After all, that is what my broker pays me on my margin!

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Using free R (Rb) as 0 mean you do - avg revenue / std of revnue as your target function. This is a much better approach than just using the averages as you enter the variance into the equation. I do think much better indicators should exist.   
  
BTW: if you build an algorithm just for yourself, the Reuters Rb can be used for you to compare between various algorithm it seems fair in that sense. If you plan to attract clients, you will need to find Rb that is representing your clients alternatives.   
  
Anyhow you made me think of a variant of the sharp ratio that might be better - this is just an idea of the top of my head, not tester not verified, I would consider breaking the Rb into daily Rb, and your trades revenue to daily Rev, than doing a variant of the sharp based on this break.

[**Dwayne Paschall**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=57125244) • You can also leverage other information:  
  
Intraday News Analytics from EOTPRO and Thomson Reuters  
  
[https://docs.google.com/open?id=0ByUhXypJM\_S3dVFPVnhqRzRhSXc](http://www.linkedin.com/redirect?url=https%3A%2F%2Fdocs%2Egoogle%2Ecom%2Fopen%3Fid%3D0ByUhXypJM_S3dVFPVnhqRzRhSXc&urlhash=tBWc&_t=tracking_disc)

[**Tom Swift**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=90656609) • To determine is A is better than B, I first filter those with a reasonable range for %Wins, #trades, and Annual Gain. Then I look at the sharpe for each resultant. Then I look at the equity curve with the full range (optimization period, cross validation period, and out of sample period) to visually see the smoothness of the equity curve.   
  
I take the results and put them in a portfolio. I keep some as backups for when individual strategies in the portfolio halt or reverse so I can swap them out.

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Hi Tom,   
  
This is great if you have few runs to look at, what if have thousands of runs?   
What if your indicators are not correlated as you wished, meaning those that are higher on %wins might have high #of trades but low annual gain and bad sharp. The fact of bad correlation making your comparison hard.... you must than state if Better sharp is better than #of trades...   
  
Eventually all the points that people raise here are valuable. I see the importance in generating one general indicator that will cover all those aspects into one figure that can be comparable among different runs.   
  
Tom, for example even the curves you look at, can you find a mathematical approach to translate the curves that you like into a figure ? By doing this instead of looking, which might be very misleading, you will have an indicator that will look for you. More precise, accurate and motionless. First you must know what you want though... : )   
  
I know people use Genetic Algorithms in their tradings/optimization phases - GA must have a fitness function to generate score, one score.   
  
If you have many indicators you can use some fuzzy logic in order to make a scoring out of those uncorrelated indicators. I do think there is some other approach to all of it making nice elegant indicator covering all those aspects.   
  
Ran.

[**Tom Swift**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=90656609) • Agreed. One number would be good.   
  
Perhaps you could aggregate the individual metrics into one 'target function'. So, first normalize each say from 0 to 100 then add them or take the average.   
  
This may not be a mathematician's ideal but it gets the job done.

[**Alec Schmidt**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=55274959) • Academic research suggests that comparison of trading strategies should be done with resampling (White's bootstrap reality check, and its extensions). I provide a short overview in ch.13 of my book   
[http://www.amazon.com/Financial-Markets-Trading-Introduction-Microstructure/dp/0470924128/ref=sr\_1\_3?ie=UTF8&s=books&qid=1304549595&sr=1-3](http://www.linkedin.com/redirect?url=http%3A%2F%2Fwww%2Eamazon%2Ecom%2FFinancial-Markets-Trading-Introduction-Microstructure%2Fdp%2F0470924128%2Fref%3Dsr_1_3%3Fie%3DUTF8%26s%3Dbooks%26qid%3D1304549595%26sr%3D1-3&urlhash=qcFt&_t=tracking_disc)  
  
The real problem is that the best in-sample strategy may be inferior in future.

[**Mark Brown mark@markbrown.com**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=56072165) • the failure of a system is most like to inferior data i have found. its the data that fails not the math, math is perfect. ~m

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Thank you Alec,   
  
I wasn't familiar with that technique by white. I mostly use other techniques for my DOE to avoid over fitting the model, always leaving out of sampled data. I see the importance of White's work for researcher all testing the same data set and getting biased result, not sure it solely answer to what I looked for.   
  
I thought he uses daily returns as past of his technique, but I will first need to read more about this (I just DL his paper), promise to get back and comment. Maybe on a new thread.   
  
As you said in your last line, the more interesting question should be - is your algorithm can be generalized such that it will be good on an unseen data. from what I read White's test don't really handle this issue.

[**Patrick White**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=49749308) • Ran, It seems you have now finally worked out the right question with Alec's help, and Alec has simply articulated the problem: "The real problem is that the best in-sample strategy may be inferior in future."  
  
The literature is very thin on this issue. In order to determine which system is better A or B you need to test against a benchmark so that you have a common point of reference. The benchmark can be a reasonably large number of randomly created system tests from your method combined into a single benchmark equity curve. You may then split up the curves into periods and compare performance each period against the benchmark based on a simple performance measure resulting in a binary outperform / underperform 1/0. Sum up the out-performance of system A divided by the total periods measured and you will have an objective number to compare against similar measures from B, C or D, etc.  
  
In essence you are maximizing your performance measure against a randomly created benchmark. This maximization will help determine the system that has the combination of the best performance according to your desired fitness measure, with the least amount of luck in its past equity curve. This system "should" perform the best in the future. You'll have to work out the specifics on your own that fit within your testing framework, but this should at least give you a rough plan going forward.

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Thanks Patric, If I am not mistaken you just described the Monta Carlo method, I am not certain it carry the promise for better future though.   
  
Yep, this method is heavy just like white reality check... But in general I do somethings that are similar in that sense. Note that I started stating I have 2 phases of work - 1 where I look at a bunch of deals, 2 where I actually use the algorithm to manage a protfolio. What been described here is for the seconds phase mostly where an equity curve exists.   
  
One point not take though is the starting equity, you will have to repeat this several times for each starting equity...

[**Patrick White**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=49749308) • Hi Ran,  
  
You are correct in identifying that the methodology I described is a specific form of a Monte Carlo method designed to identify systems from a group of optimizations that are more likely to give superior future results. Let me attempt to convince you that the method described has a good chance to produce superior out of sample results by being a bit more specific about the actual problem.  
  
When you optimize a large number of systems through random (genetic) optimization by varying system parameters, the longer you optimize, the more likely you are to find a system or systems with superior performance. The question then becomes how well will such a system perform on future data? From my tests and experience, if I optimize "too long", I find that the out of sample results decrease on the best systems. This supports Mark Brown's 65% heuristic. By the way Mark, it's good to hear you have put your Cray to good use!  
  
So clearly some of the performance of a given optimized system is due to luck and some is due to skill. But how do you determine systems that owe their performance mostly to skill rather than luck? Or more specifically, how do you define (or minimize) luck in the testing procedure? If you compare your system results against an average random selection of systems created by your optimization method, you can then determine how well this average benchmark performed against the market conditions at that time, or more importantly at many points in time. During the in-sample test the market followed one specific path. In the future the market may follow a virtually infinite number of paths. So the systems that optimize best against a certain market path may be more prone to out-of-sample failure because it is very likely that the future market path will be very different from the historical path.  
  
If you follow the logic up to this point you will recognize that it is not as important that system performance overall against the market be maximized (such as focusing on finding the best fitness function) as system performance vs. the benchmark be maximized. By maximizing your performance against the benchmark, you determine which systems perform better than random. When a system performs better than random you could say that its results during that period are due more to skill than luck. The key is to maximize the number of periods during which the system performance exceeds the benchmark, thus showing that the system contains more skill than luck in producing its returns. A system that is 65% more skilled than the average benchmark is more likely to do well against a future unknown market path than a system that has higher returns but only is 60% more skilled than the average benchmark!  
  
While the future path of the market is unknown, by trading a system forward that is very skilled, you tilt the odds of future good performance in your favor. It is interesting to note that such "skilled" systems will usually not be the best performer from a total return or return/risk standpoint. From this you can generalize that systems that maximize utility tend to rely more on luck over skill to achieve their outstanding results during the test period. This luck cannot be replicated on new data, and thus the out-of-sample performance under-performs expectations.

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Thanks for the explanation Patric.   
This raise some questions -   
  
1) Why do you need to randomly generated curve and not take just some curve and compare all to that curve ?   
  
2) Period of time length - I presume the best of use here is day by day. Is there a reason to take bigger time length ? (I use daily for my calculations).   
  
Last, I would think that 1/0 binary and an average are again not such good criteria...   
I do all of the above, kinda developed variants of this on my own as I didn't find it on the literature.   
  
But again, I do need a function for a more preliminary steps prior to using this technique. My method of work include few steps in order to reduce time and perform optimization for different elements of the algorithm. If I will try to optimize signals, executions, exit strategy, money management, risk management and the mutual work of several algorithms in the same time all at the same optimization phase, I will drawn in data, therefor I divide it into several steps of optimization... not the best, but more practical. Only at the last optimization step I see the equity curve performing and I do similar method.   
  
Last, when you get into money management, you will see that the curves will change for a different cash you have on start, at list this is what I naturally see in my work. So this all procedure need to be repeated several times as well...

[**Patrick White**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=49749308) • Ran good questions!   
  
1) From a practical standpoint comparing one system to several hundred is no problem. But comparing one system to tens or hundreds of thousands of systems presents a performance challenge, particularly if you need to compare more than one system with all the others and are operating under time / computing constraints. My initial inclination was to do as you say but it produced odd and unreliable results, essentially gaming the optimization criteria rather than finding the system that gave best forward looking results. An average random curve seemed to produce better results from the optimization. After collecting the random systems, my optimization routine only needs to cycle through once for each system for comparison purposes. Because there is a fixed comparison point, the results are effectively all on the same scale and thus the cross comparisons are valid. This is probably the real answer.   
  
My initial strategy was essentially a king of the hill approach where one system was generated and a second compared to the first. The system that performs best remains and is compared against the next systems until a better system is found, and so on. That better system is then compared against other new systems until the optimization finishes. That approach didn't work out very well for me and so I started using the benchmark approach and saw much better results from the optimizations.   
  
2) I think the "period of time length" depends on A) your goals such as how often you desire to hit a new equity high weighed against your strategy's capability for achieving that goal, B) the underlying granularity of the data, and C) the fundamental cycles in the markets you are studying (do they play out daily, weekly, monthly, etc.). There is no general answer for this except to say that the measurement period should probably conform to how reasonably your strategy can hope achieve an equity high within a given period of time. You may need to experiment with shorter periods as well as longer to determine what may be reasonable in your case and what may match up best with both strategy and market conditions.   
  
What other method for comparison would you use if not 1/0 binary? If skill is determined by how often one system beats a group of systems or a benchmark, then 1/0 would seem sufficient. If magnitude of comparison is used, it would seem to favor the highest performing systems overall, or to be very similar to simply maximizing some utility function.   
  
And as I stated before, maximizing utility is not a very good method for producing robust out of sample results due to the random future path that any market takes.   
  
But the goals should drive the development. If you're trying to find the best performing system then you will use a different fitness function than if you are attempting to combine multiple low correlated systems into a single smoothest equity curve. I have my development divided between the backtesting / system generation phase and the portfolio optimization phase where issues such as system correlation, position sizing present different problems with different goals and thus different fitness functions.

[**Ran Naot**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=82462884) • Thank you again for the great discussion !   
  
I don't use 1/0 but the distance from the curve, and than don't use average but use some calculation on the percentiles so I don't look at the most profitable system yet I think it is better than 1/0 as it holds more data.   
  
Period of time is something I experimented with... I started by thinking the most important times are the reports to clients, you can have a loosing system during periods between reports, and it will not really matter if just before the reports you will make your gains. So I initially started with just those points in time, but than I gradually shifted into daily - can't even recall why at the moment... : )   
  
Patrick, I hope you share my initial feeling that I got when I open books on the subject and read - Calculate Avg W / Avg L and let this be your fitness function + don't have big DD + be most profitable at end of run....

[**Patrick White**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=49749308) • Yes Ran, thanks for the excellent discussion! I will have to experiment with using percentiles as well as some of the other interesting ideas mentioned in this thread. I forgot to mention that you can use multiple look-back periods, such as daily and weekly.  
  
As to your last point, yes I think it is clear that the books sort of miss the point in general. It really comes down to experimentation and lots of deep thinking about the true goal and how to accomplish this in practice.

[**Vasyl Harasymiv**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=2013134) • My problem is related to the one described by the initiator of this stream. I have found a nice stationary process in currency (EUR/USD) but not fully sure my positioning is right. I would welcome ideas how to optimize entry, exit, PT and SL on each trade. The data is already traded on profitably, however, not as efficient as it could. Please look at the overview of the strategy here:  
  
[http://www.dukascopy.com/fxcomm/fx-article-contest/?Stability-In-Chaos-Of-EUR&action=read&id=1159](http://www.linkedin.com/redirect?url=http%3A%2F%2Fwww%2Edukascopy%2Ecom%2Ffxcomm%2Ffx-article-contest%2F%3FStability-In-Chaos-Of-EUR%26action%3Dread%26id%3D1159&urlhash=pVsE&_t=tracking_disc)

[**CJ Forex**](http://www.linkedin.com/groups?viewMemberFeed=&gid=62719&memberID=127253055) • Ran -- sorry to be so late to the post. But what you describe is my thing. I basically do something similar to you. I have hundreds and hundreds of strategies running in "Simulation" mode. Then a management algorithm decides from moment to moment which algos to give money to.  
  
Current academic research (and I have found to be best in practice) is not to do a turn-off, turn-on approach but rather an allocation approach. ie. With 10 strategies, your account balance is allocated among all 10 of them at different percentages.  
  
ie [.1,.2,.15,.05,.05,...] with the sum being 1 (or 100 percent).  
  
The allocation vector is changed based on the performance of each strategy and your algorithm. Of which there are lots of algos out there.  
  
A lot of the stuff I do is licensed to different funds, so I cant talk publicly, but if you message me, I can steer you in other directions.