THE PROP FIRM PORTFOLIO BLUEPRINT

How to build an automated trading portfolio that can pass prop firm challenges.

A step by step look at how algorithmic portfolios are generated, tested, combined and deployed. Written for traders who want to understand the process properly before putting any money behind it.



By Tom (CEO) and Dylan (CTO), co-founders of Quantiva Pro

UK

Why we wrote this

Most traders who try prop firms go in with one strategy, very little data and a lot of hope. Around 90% of them never get funded. This guide shows you a different way to approach it, using automated portfolios built from tested data instead of gut feel.

Tom has been trading for over ten years. He started out manual and moved into algorithmic trading a few years ago. Dylan started manual trading in 2018, spent a painful couple of years learning what doesn't work, and has traded purely with automated systems since 2020. Everything in here comes from what the two of them do day to day, including the mistakes that cost them money along the way.

You don't need to know how to code to follow any of this, and you don't need years of trading experience. What you do need is a bit of patience and a willingness to follow a process. Read it front to back once, then keep the checklist at the end handy for when you build your own.

Who this guide is useful for

If you have capital but no time to sit in front of charts, it will show you how a portfolio can trade for you while you work, run a business or go on holiday. If you have the time but not the capital, it will show you how to use prop firms to get access to funded accounts for a small entry fee, and how to give yourself a repeatable way of passing them.

WHAT'S INSIDE

01 Why most traders fail prop firm challenges p. 3
02 Four expensive lessons from building our first systems p. 4
03 The five step blueprint, explained in detail p. 5
04 Why a portfolio beats a single strategy p. 7
05 Deploying on a prop firm without breaking the rules p. 8
06 Your technical setup p. 10
07 Prop firms, cash accounts and the flywheel p. 11
08 Running and maintaining your portfolio p. 12
09 Your build checklist p. 13

01 Why most traders fail prop firm challenges

Roughly 90% of traders fail to get funded, and only around 1% ever receive a payout. Before building anything, it helps to understand why those numbers are so bad, because the reasons point straight at the fix.

Start with the coin flip test

Dylan ran a Monte Carlo simulation on a completely random approach. Flip a coin, go long on heads and short on tails, use a 1:1 risk to reward ratio and take 200 trades. With a 50% win rate that system has no edge at all. It shouldn't make money over the long run.

It still passed about 40% of prop firm challenges. So if pure chance passes 40% of the time and real traders pass 10% or less, the traders must be doing something to make their odds worse than random. In our experience it comes down to three things.

1 Psychology takes over

You have one bad day, or you miss a trade you were waiting for, and it throws you off. You start taking more trades to win it back. Revenge trading kicks in and the account spirals. This is the single biggest reason challenges get failed.

The fix: take the decisions out of your hands. An automated system follows its rules on a bad day exactly the same way it does on a good one.

2 Trading one strategy with one equity curve

No strategy is perfect. Every one of them has troughs and drawdown periods. If your only strategy trades gold and gold goes through a rough patch, there's nothing else on the account to hold it up, so you slide into drawdown and often lose the challenge.

The fix: run several strategies on different assets, so that when your gold strategy struggles, an index strategy might be carrying the account. Chapter 04 covers this in detail.

3 Guessing instead of knowing

Ask yourself what your last 500 trades look like. What's the profit factor? What does the equity curve look like? Most traders can't answer, and that lack of data affects them psychologically. If you don't have real belief in the system, you won't stick with it when it hits a losing streak.

The fix: only trade systems you have full statistics on, so you know what normal looks like and don't panic when a normal drawdown shows up.

02 Four expensive lessons from building our first systems

Dylan's route into algo trading was far from smooth. Each mistake below cost real time or real money, and each one shaped a rule we still follow today. You can skip the pain and just take the rules.

Lesson 1. Manual backtesting will fool you

Back in 2018 and 2019, Dylan was backtesting bar by bar on tools like FX Replay and TradingView. The problem is that it's very easy to skip a few bars too quickly, see where price went, and then justify a trade you probably wouldn't have taken in real time. He fooled himself into thinking he had a great strategy. If you've ever backtested by hand, there's a good chance you've done the same.

The rule

Let software test strategies on historical data with fixed rules. You can't accidentally peek at the future, so the results you see are the results the rules actually produce.

Lesson 2. Don't spend months perfecting one idea

Convinced he had a winner, Dylan spent close to a year coding that one strategy and tweaking it. It went live after about nine months and the results were horrific. The strategy had been tuned so tightly to past data that it fell apart on new data. That's what curve fitting looks like, and nine months of work went with it.

The rule

Don't rely on coming up with one clever idea yourself. Coming up with novel ideas is hard. Use a data mining approach that tests thousands of strategies and keeps only the ones that survive tough testing.

Lesson 3. Risk management isn't optional

The first real portfolio went live on a $50k cash account in the last week of January 2020. A few weeks later COVID hit and markets dropped around 40% in a couple of weeks. The portfolio had no stop losses and no proper risk approach, and most of the account was lost very quickly.

The rule

Every strategy gets a stop loss and a fixed amount of risk per trade. You should always know what you can lose before you enter a trade, and that amount should never be your whole account.

Lesson 4. Spread your risk across assets

Around June and July 2020 the portfolio was rebuilt properly. This time it was balanced across multiple assets instead of leaning on one. That version is the foundation of everything in the rest of this guide, and Dylan hasn't placed a manual trade since.

03 The five step blueprint, explained in detail

This is the process we use to go from nothing to a live portfolio. The idea is simple. Generate a huge number of strategies, throw out the weak ones, stress test the rest, combine the survivors and then deploy.

1 Generate — 2 Filter — 3 Stress test — 4 Combine — 5 Deploy

01 Generate thousands, even millions, of strategies

Instead of sitting down and deciding "I want to trade the RSI" or "I want a volatility strategy", you let data mining software build them for you. We use a platform called SQX. You tell the builder which market, which timeframe and which metrics you care about. For example, MetaTrader 4, the S&P 500, on the H1 timeframe. Then you leave it to crunch the numbers.

Given enough time it generates hundreds of thousands and eventually millions of strategies. On the Nasdaq we'll generate anywhere from 10 to 100 million. A single build usually runs for a day or two, and you don't need to watch it while it works. Most of what it produces will be pretty bad, and that's completely expected. The next steps exist to find the good ones.

02 Filter for the ones that actually perform

The first cut uses basic performance filters to remove anything that doesn't hold up on the numbers. The software gives you access to somewhere between 100 and 200 metrics, but you don't need most of them. We keep it simple.

FILTER	HOW WE USE IT
Profit factor	Our main ranking metric. We lean on it a lot.
Return to drawdown	Checks the strategy earns enough for the pain it puts you through.
Sharpe or Sortino ratio	Optional. Swap them in if you prefer them.
Win rate	Mostly personal preference. If a 30% win rate would drive you mad, set a minimum of 45%.

03 Stress test everything that's left

A strategy that looks good might just be a fluke of the data. Robustness testing puts each one through its paces to see if it survives. There are a lot of tests, but two examples make the idea clear.

Parameter test

Say you have a strategy that buys based on an RSI of 14, and it looks great. Now test it on RSI 13 and RSI 15. If those versions fall apart, the original was probably luck. A real edge should still work when you nudge the settings slightly.

Additional markets test

If a strategy was built on the Nasdaq, test it on closely related markets like the US30 and the S&P 500. You'd expect it to perform reasonably well there too. If it doesn't, it gets removed.

The simple principle: when similar versions of a strategy don't work, kick it out. Only keep the ones that show real robustness.

04 Remove look-alikes, then run the holdout test

Next, filter by correlation and remove strategies that are too similar to each other. There's no point running five strategies that all win and lose on the same days. The target is a set of **10 to 20 uncorrelated systems**. That number comes from Ray Dalio, who said the only holy grail that exists is 10 to 20 uncorrelated return streams. Dylan builds every portfolio around that idea.

Then comes the final check, the out of sample or holdout test. This is as close to a time machine as you can get. You hold back a recent chunk of data the strategy never saw during building, and ask: if we'd launched this six months ago and put cash behind it, what would the results look like? You have to follow a very specific process here so the data can be trusted, because this is the last line of defence before real money goes in.

WHAT A REAL EXAMPLE LOOKS LIKE

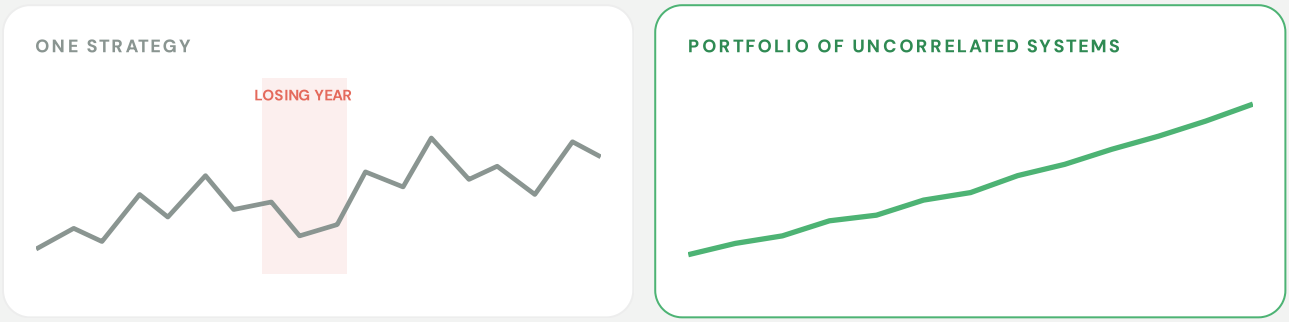
The V3 portfolio was built in March 2025 and traded until the following January with only minor tweaks. Everything after March was data that didn't exist when the portfolio was built, so its results over that period were true out of sample performance. That's the kind of evidence you want before trusting a system.

05 Deploy, monitor and scale

Once the portfolio is built, it goes onto a prop firm or live account. This is the part most people rush, so chapters 05 and 06 walk through it properly. After that your job is to monitor the system, trust the work you did in steps one to four, and grow the capital behind it. Even the best system in the world does nothing for you without money behind it, which is why scaling matters.

04 Why a portfolio beats a single strategy

A single good strategy can still have losing months and even losing years. If you start a challenge at the wrong point, you could make nothing for a year, or lose the account. A portfolio fixes that by spreading the work across many systems.



Simplified illustration of the idea.

One of Dylan's live portfolios runs 32 expert advisors at once. Because they don't all win and lose at the same time, losing years become much rarer. If you went back to any random point in its history and started a challenge, your chance of passing would be far higher than with one strategy on its own.

How to structure a portfolio

Mix instruments. A typical portfolio covers five or six instruments, such as gold, the Nasdaq, the US30, the Nikkei, USDJPY and the DAX, with low correlation between them.

Mix timeframes. Combine H1 and H4 strategies so the portfolio isn't tied to one rhythm of the market.

Weight longs and shorts sensibly. On indices, build mostly long strategies, because shorting a market that rises most of the time isn't a great idea. Keep some shorts as a hedge for when things get tough. As a rough guide, if you risk $1,000 per trade on a long, you might risk $250 to $350 on a short.

Build sub-portfolios. You don't have to run everything everywhere. You might put the full portfolio on two accounts, a high win rate version on two others, a low win rate version on two more and a gold and Nasdaq only version on the rest. A manual trader with ten prop accounts is usually trading the same strategy on all of them, so one bad week can take out every account. With sub-portfolios, ten accounts can have ten different outcomes.

Will everyone end up with the same strategies?

No. Think of a deck of 52 cards. Every time you shuffle it properly, you get an order that has almost certainly never existed before. That's with only 52 variables. The builder has thousands of them, so the number of possible strategies is about as close to infinite as it gets. You might build something similar to someone else, but it won't be the same.

Book a Free Strategy Call →

05 Deploying on a prop firm without breaking the rules

Prop firms give you access to large accounts for a small fee, but they come with rules. The good news is that a systematic portfolio trips far fewer flags than most manual traders do, as long as you set it up with the rules in mind.

Know the rules before you pick a firm

RULE	WHAT TO DO ABOUT IT
Max daily drawdown	Use an equity protector that switches trading off when the limit is hit (see below).
Max overall drawdown	Set your risk per trade so a normal drawdown for your portfolio fits comfortably inside it.
Max risk and margin	Check your position sizes and the number of trades that can be open at once.
News trading	Choose firms that allow it or offer an add-on. Otherwise, pause the EAs around news.
Hedging	Some firms allow longs and shorts on the same account, some don't. Adjust your portfolio to match.
Reverse trading	Never go long on one firm and short on another. That gets you banned.

We work with a list of around 10 to 12 firms whose rules line up well with how our portfolios trade, and we've learned from experience that some firms are worth avoiding. Do your homework on a firm before paying for a challenge.

Never lose an account to daily drawdown

This one is completely avoidable. Use an equity protector, either from a tool like Traders Connect or a custom EA, that turns trading off the moment your daily drawdown limit is reached. If you're not using one and you're relying on the daily reset instead, you're probably cutting your chances of getting funded by 50% or more.

Handling news

News rules can be annoying. Often a news violation is only a soft breach, meaning the firm might remove the profit made during the news window rather than close your account. If you want to avoid it completely, pick a firm that allows news trading, or temporarily turn off take profits and stop losses around news events if the firm's rules require it.

Setting and changing your risk

Changing risk takes about 30 seconds. In MT4 or MT5, double click the EA, change the risk per trade setting from, say, $200 to $250, and click OK. If you use a copier like Traders Connect you can apply a multiplier instead and it's even quicker.

Choosing your risk level

Risk and speed go hand in hand. The more you risk per trade, the faster you'll usually pass, but the more accounts you'll fail along the way. Decide what matters more to you before you start.

APPROACH	TYPICAL TIME TO PASS	TRADE OFF
Conservative	5 to 6 weeks, up to 2.5 months	Focus on pass rate. Launch ten accounts and aim to pass around seven of them.
Standard	3 to 4 weeks	A balance of speed and safety. This is what we'd call average.
Aggressive	2 weeks or less	Much quicker, but expect more failed accounts. It costs you more in challenge fees, and we don't advise it.

We take a mixed approach ourselves. Scalping systems go on some accounts and target a pass in about two weeks. Swing and intraday systems go on separate accounts and target one to one and a half months. Once you already have funded accounts running, how long a new one takes matters much less. When you've got $400k in funded capital, waiting an extra couple of weeks for the next account isn't a problem.

Reading drawdown the right way

A drawdown number on its own tells you very little. You need to look at it alongside two other things.

Compare it to your risk per trade

A $7,000 drawdown looks scary. If you're risking $100 per trade, it's pretty bad. If you're risking $1,000 per trade, it's actually good. And because risk is adjustable, lowering risk lowers the drawdown with it.

Compare it to the time period

If that $7,000 drawdown is the worst moment across 10 or 12 years of data, don't build your whole plan around one event. A challenge usually lasts one to three months, so the odds of hitting that exact event are low.

A note on copy trading flags

Prop firms look for many accounts trading identical signals. The chance of being flagged with this approach is low, because you build your own portfolios, you own the source code and very few people have the same strategies. Several people on our team have run the same firm without issues so far. There are also 30 or 40 good firms out there, and the less mainstream ones tend to be even less of a concern.

THE TARGET THAT MAKES THIS WORTHWHILE

Our long term goal on prop firms is to build up seven figures of funded capital and aim for a conservative 1 to 2% a month on it. That doesn't sound like much until you run the numbers. Two percent a month on $1 million or $2 million is a serious amount of money, and it doesn't require any heroic risk taking.

06 Your technical setup

The software can look intimidating at first. Think back to the first time you opened MetaTrader or TradingView. It looked complicated then too, and now it's second nature. Most people are comfortable after their first week or two.

What you need

PIECE	WHAT IT DOES
Data mining software	Builds and tests the strategies. We use SQX. It comes with Dukascopy data from the Swiss broker, going back to 2011 for most indices and 2003 for gold.
MetaTrader 4 or 5	Free. This is where the finished strategies actually run.
A VDS	A virtual dedicated server, one step up from a VPS. It's a remote computer that runs 24/7 and does the heavy number crunching. We recommend Hetzner, a German data centre company, but any solid, well rated provider works.
A broker or prop account	So you're trading real capital instead of staying on demo forever.

From strategy to live chart

Once a strategy is ready, you export it. You get the MQL4 source code along with any indicators it uses. Compile them inside MT4, which takes about ten minutes, then drop the EAs onto the charts. After that everything runs inside MetaTrader and doesn't need to be linked to anything else.

The source code can also be exported to MT5, MultiCharts and TradeStation. If your broker or firm uses a different platform, a trade copier such as Traders Connect can copy trades across to NinjaTrader, cTrader, DXTrade and most others. That's also the usual route for US traders, where MT4 and MT5 access is more limited.

Laptop, phone and VDS

You can run the data mining locally on a laptop, but a VDS is simpler and safer. It runs around the clock, and if your laptop breaks it doesn't matter. You connect to it remotely from your computer. You can't run the setup from a phone, but you can still open the MT4 or MT5 app and close trades manually if you ever need to.

CFDs or futures?

Both work. Whether you trade the Nasdaq or gold through a CFD or a futures contract, the underlying asset is the same. The only difference is the platform and a few extra rules. Futures prop firms, for example, often require you to exit positions at the end of the day, which needs a small tweak.

07 Prop firms, cash accounts and the flywheel

There are two ways to put a portfolio to work, and both are valid. We use both ourselves. Which one suits you depends mostly on how much capital you have right now.

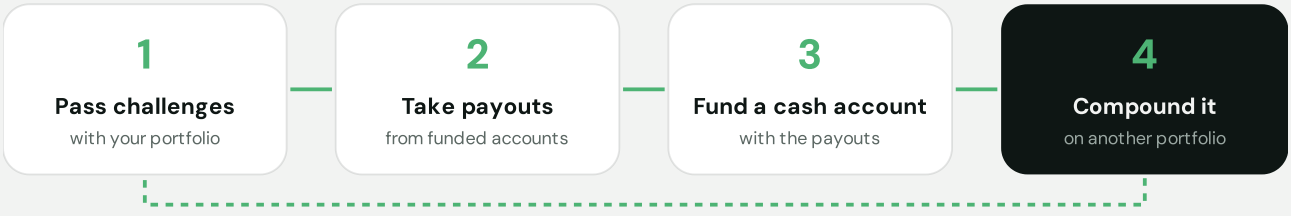
	PROP FIRM ACCOUNT	CASH ACCOUNT
Entry cost	A challenge fee, often around $200 to $300	Your own capital, for example $10k or $20k
Upside	Thousands, even five figures, on a $100k or $200k account	Whatever your capital earns
Rules	Daily drawdown, max drawdown, max risk, margin, news	None beyond your own. Trade well and withdraw.
Typical target	1 to 2% a month, excluding passing the challenge	Around 3 to 6% a month on a larger account
Main risk	Breaking a rule, or the firm refusing a payout	Broker safety and your own drawdown

Keeping a cash account safe

If you're putting in a lump sum, look for FSCS protected brokers. Vantage and Pepperstone are reasonable examples, and there are plenty of others. We use IC Markets and Fusion Markets, which are a bit more offshore. If full protection matters to you, stick with FSCS covered brokers and don't hold more than £100,000 in any single account, because that's the limit of the cover. Spread larger amounts across several accounts.

The flywheel: combining both

The most powerful setup uses the two routes together. Treat it like a business. Money going in is challenge fees. Money going out is payouts. The goal is simply to keep the second number much bigger than the first.



Each turn of the wheel builds on the last. Payouts stop being income you spend and start becoming capital that trades for you on its own account, with no firm's rules attached.

08 Running and maintaining your portfolio

Once a portfolio is live, the hardest part is often leaving it alone. The same psychology that ruins manual trading can ruin automated trading too, if you let it.

Don't micromanage it

If you jump in without understanding what each EA is trying to do, you'll be tempted to close trades early or switch things off during a normal drawdown. That defeats the whole point of an automated process that's meant to be left alone. This is exactly why steps one to four matter so much. When you know how your systems behave, you can trust them.

Watch out for Martingale systems

You've probably seen the Myfxbook and FX Blue pages promising 1% a day with an equity curve going parabolic. Those are usually Martingale systems. You don't know the logic behind them, they don't use sound risk management, and they look fantastic right up until they fall off a cliff. The portfolios in this guide use normal risk management, often around half a percent per trade, with a fixed amount at risk on every trade. It's less flashy, but it's built to last.

A realistic maintenance routine

HOW OFTEN	WHAT TO DO
Weekly	A quick check that everything is running. For most people this is the only regular touchpoint.
Monthly	Review performance. Keep your star players and remove the laggards that aren't pulling their weight.
Every 3 to 6 months	Refresh the portfolio with newly mined strategies, depending on market conditions. We're on version four of ours.

How much time it really takes

While you're learning and building your first portfolio, expect 30 to 60 minutes a day, which is about what a manual trader spends anyway. Most people have their first portfolio live in around four weeks, or two if they go all in. Once it's running, that drops to about five or ten minutes a day, plus extra time only if you choose to build new portfolios. A lot of the waiting happens while the builder works in the background, and you don't need to be there for it.

Because every strategy has a stop loss and fixed risk, there's no single event that can wipe out the whole account. On a lower risk setting the drawdowns stay manageable, which makes the whole thing far less stressful than watching charts all day and waiting for an alert to ping.

09 Your build checklist

Use this page as a reference while you build. If you can tick every box, you've followed the process the way we'd follow it ourselves.

BEFORE YOU BUILD

- ◯ I've decided whether I'm starting with prop firms, a cash account or both
- ◯ I have a VDS set up and MT4 or MT5 installed
- ◯ I've picked the markets and timeframes I want to build on
- ◯ I know which metrics I'll rank strategies by

BUILDING THE PORTFOLIO

- ◯ Strategies filtered on profit factor and return to drawdown
- ◯ Every survivor passed robustness and additional markets tests
- ◯ Look-alike strategies removed by correlation
- ◯ 10 to 20 uncorrelated systems selected
- ◯ Out of sample holdout test completed and trusted

RISK AND STRUCTURE

- ◯ Every strategy has a stop loss and fixed risk per trade
- ◯ Five or six instruments with low correlation
- ◯ Mostly long on indices, smaller shorts as a hedge
- ◯ Risk level chosen: conservative, standard or aggressive
- ◯ Drawdown checked against risk per trade and time period

BEFORE GOING LIVE ON A PROP FIRM

- ◯ Firm's rules read: daily and max drawdown, risk, margin, news, hedging
- ◯ Equity protector set to the daily drawdown limit
- ◯ No opposite positions across different firms
- ◯ Strategies compiled in MT4 or MT5 and on the charts

ONCE IT'S RUNNING

- ✓ Check in about once a week
- ✓ Review monthly and cut the laggards
- ✓ Refresh with new strategies every 3 to 6 months
- ✓ Don't close trades on a whim during a normal drawdown
- ✓ Move payouts into a cash account and compound them
- ✓ Keep each cash account under £100k if you want full FSCS cover

The three ideas to remember

Most traders fail prop firms because of psychology, relying on one strategy and not knowing their own numbers. A portfolio of 10 to 20 tested, uncorrelated systems handles all three. Build it carefully, protect it with proper risk rules, then give it room to do its job.

NEXT STEP

Want a portfolio built and tested for you?

- Talk through your prop firm goals with our team.
- See how our portfolios are built, tested and deployed.
- Get clear next steps, whether you work with us or not.

Book a Free Strategy Call →

Free 30-minute Zoom call. No pressure, no obligation.
quantivaproprogram.com/apply?el=prop-lead-magnet

QUANTIVA PRO
Part of the EMFX Group