Crypto Trading Bot Suite - PRD

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Problem

As a newcomer to crypto trading, I have no way to enter the market safely without first mastering technical analysis and programming.

Trading by hand demands constant screen time, and one missed candle can mean a missed setup or an emotional entry. Trading methods taught online are described in videos and books, not in rules a computer can follow, so it is hard to tell which ones work.

Fees and spreads quietly erase small edges. A method that looks profitable at zero fees can lose money once a real exchange charges 0.2% to 0.6% a trade.

I also trade from New York, where shorting is not allowed and some exchanges are not available, which narrows the usual playbook.

Vision & Opportunity

I see an opportunity to build a multi-coin, multi-strategy trading bot that tests published trading methods on real market data, shows every decision in plain language, and risks no real money until the results justify it.

Crypto trades around the clock, so a bot can watch every pair on every timeframe in a way a person cannot. Several exchanges expose free price history and APIs, which makes it possible to test a method over years of data before using it.

Most retail bots are black boxes that promise returns. This product differs by making honesty a feature: every trade carries a reason, results are shown after fees, an AI reviewer proposes changes that only the owner can approve, and a locked block of history is kept unseen for one final test.

The bot is also a portfolio piece: a working product with a live dashboard, a research process and a documented decision trail.

Target Use Cases & Tasks

As a trader new to crypto, I want to run proven trading methods automatically, so that I do not need to read charts all day or write code.

As an owner, I want to try new strategies side by side and see each one's trades, win rate and profit or loss separately, so that I can keep what works and stop what does not.

As an owner, I want every result to include fees and slippage and to come from data the strategy was never tuned on, so that I can trust the numbers before any real money is involved.

As an owner, I want an AI reviewer that studies the results and suggests changes, but cannot apply them without my approval, so that the bot improves without drifting out of my control.

As an owner, I want to watch and control the bot from my computer or iPad, and to be alerted by email or text, so that I never have to sit at a terminal.

Proposed Solution

Build a modular bot in which any trading strategy plugs into one shared set of exchanges, pairs, risk limits, paper accounts and dashboards, and in which every decision is logged with a chart and a plain-language reason.

Top 3 MVP value props:

1. Run several strategies side by side on several exchanges and pairs, each with its own accounts, switches, stats and notifications.
2. Test and trade on paper first, with fees, slippage and a locked out-of-sample period, so that results are honest before any real money is used.
3. Explain everything: one log file and one chart per event, a live dashboard, and an AI reviewer whose proposals wait for the owner's approval.

Goals

- Protect the account first: do not lose money, then maximize returns, with at least 5% to 10% a year after fees from leaving funds in the bot.
- Produce enough trades to judge a strategy: aim for 5 to 10 trades a week across all coins at a win rate of 50% or better, as the owner's target for the second strategy.
- Keep every strategy and every setting change explainable, reviewable and reversible.
- Make adding a new strategy a matter of adding a tab, a rule set and a chart, not reworking the bot.

Non-goals

- Send real orders to any exchange in Year 1 without a separate code review and the owner's typed confirmation.
- Short positions while the owner lives in New York (shorts are found and simulated as ghost trades, never traded).
- Invent strategies: every strategy comes from a source the owner provides.
- Open the dashboard to the public internet; it is reached only through the owner's private network.

- Native mobile apps; the dashboard is a web page that works on a phone and iPad.

Year 1 Success Metrics

Year 1 succeeds if at least one strategy shows a positive result after fees on data it never saw, and the owner can explain every trade it made. Starting point in November 2026: Trend Momentum earned about 6% a year at Gemini fees in backtests, and Bullrunners was about break-even at the same fees.

Metric	Year 1 target	Why it matters
Closed paper trades per strategy version	30 or more before any verdict	Smaller samples are noise; the reviewer makes no proposals below this
Return after fees and slippage	5% a year or more, per strategy	The owner's minimum for leaving funds in the bot
Trades per week, all coins together	5 to 10	Enough activity to judge a strategy within months
Win rate	50% or more where the strategy targets it	The owner's target for the second strategy
Held-out year (2025) run	Once, by the owner, at the end	Keeps the final test honest
Real orders sent without a typed confirmation	0	The bot stays paper-only until reviewed

Conceptual Model

Exchanges feed the data layer, strategies turn candles into signals, and every signal passes the risk guard before the paper broker acts; each decision is logged, the AI reviewer reads the log, and only the owner's approval changes settings or code.

Requirements

Legend: [P0] = MVP for paper testing. [P1] = important for a delightful experience. [P2] = nice to have.

As a trader new to crypto, I want to run proven trading methods automatically, so that I do not need to read charts all day or write code.

Exchanges, Pairs & Data

- [P0] Exchanges and pairs come from one configuration file with an on/off toggle for each; none is hardcoded in code.
- [P0] Candles are read only through one data layer that serves closed candles, caches them per exchange and never merges candles from different exchanges.
- [P0] The bot never analyzes across a hole in the data: short outages are bridged with flat, marked candles, and longer holes are never bridged.
- [P1] Coinbase Advanced is the main paper-trading venue; Bitstamp and Bitfinex supply longer history for research; Gemini is a paper-trading venue with its own fees.
- [P2] A venue with lower real fees is wired for real orders only after its own code review.

Strategy Engine

- [P0] Bullrunners runs as a strict sequence: trend, divergence, break of structure, Fibonacci zone, reversal candle, then stop loss; each step must pass before the next.
- [P0] Trend Momentum, built from Ernest Chan's momentum chapter, trades only while a coin is above its own trend average and ranks coins against one shared account per exchange.
- [P0] Every tunable number lives in one settings file with a plain description and a status (source rule, inferred or experimental).
- [P1] A new strategy plugs in by adding a tab, its rules and its own chart view.
- [P2] The coin list for a strategy can be chosen by a rule, such as trading volume, instead of by hand.

As an owner, I want to try strategies side by side and see each one's trades, win rate and profit or loss separately, so that I can keep what works and stop what does not.

Strategy Control

- [P0] Each strategy has its own accounts, switches, statistics and notification label.
- [P0] A strategy is switched on in a fixed order: exchanges, confirm, pairs, confirm, go live; turning it off keeps the saved choices.
- [P0] Turning something off stops new trades only; open trades are held to their target or stop.
- [P1] A change log under the switches records what was switched and when.

As an owner, I want every result to include fees and slippage and to come from data the strategy was never tuned on, so that I can trust the numbers before any real money is involved.

Testing & Honest Results

- [P0] Backtests replay the same engine and paper broker as live, with no look-ahead, and charge fees and slippage.
- [P0] The last 30% of history is locked as out-of-sample; backtests end before 2025-01-01 and the research machine refuses later dates.
- [P0] The paper broker is pessimistic: a stop wins over a target inside one candle, gaps fill at the open and a target never fills in its entry candle.
- [P0] Every run saves its settings, software version, data fingerprint and trades.
- [P1] Each exchange carries its own maker and taker fees into paper accounts; results are reported by year and market regime.
- [P1] The dashboard shows profit after fees and slippage next to the raw figure.
- [P2] A limit-order (maker) entry mode is measured for lower fees.

Risk & Safety

- [P0] Every order passes the risk guard; risk limits and paper money settings are edited only by the owner.
- [P0] Each trade risks 1% of the account at its stop.
- [P0] The default mode is paper; live needs a setting, an environment flag and a typed confirmation that lists every exchange and pair.
- [P0] Long only while the owner is in New York; short setups are found and simulated as ghost trades that never count in real results.
- [P0] A filled trade is held until its target or stop; only the profit lock may raise the stop, never loosen it.
- [P1] Take profit is 2:1, with a profit lock that trails the price past 2:1.

As an owner, I want an AI reviewer that studies the results and suggests changes, but cannot apply them without my approval.

AI Reviewer

- [P0] The reviewer runs as a separate read-only process and is never in the trading path.
- [P0] Settings changes go only through proposals that need a human-written, expiring permission; each is saved as a version, logged and reversible.
- [P0] Code proposals wait for the owner and are never applied by code; approving one first saves a code snapshot.
- [P1] Reports warn below 30 closed trades per version and make no proposals from small samples.
- [P1] Each proposal shows its evidence: sample size and a backtest comparison.
- [P1] A daily summary and a live feed explain what the bot and reviewer saw.
- [P2] The reviewer can switch between a free and a paid model provider.

As an owner, I want to watch and control the bot from my computer or iPad and be alerted, so that I never sit at a terminal.

Dashboard, Alerts & Hosting

- [P0] The dashboard has one tab per strategy, and its chart draws only that strategy's indicators.
- [P0] It works on desktop, iPad and phone, and is reached only through the owner's private network.
- [P0] Email and phone alerts name the strategy, and secrets come only from environment variables.
- [P0] A research machine runs backtests on demand and switches itself off; an always-on machine runs the monitor, dashboard and agent in paper mode.
- [P1] A public demo of the dashboard runs on sample data and never sends a command to any server.
- [P1] One command updates the bot, runs the tests first and stops if any fail.
- [P2] Tap a mark on the chart for a one-line plain-language explanation.