RIGACAP

Adaptive AI Trading Platform

An autonomous, regime-aware trading system combining ensemble signal intelligence, walk-forward validation, and AI-powered content generation to deliver institutional-grade returns and market insights.

+289%
5-YEAR RETURN

1.02
MEDIAN SHARPE RATIO

-15.1%
MAX DRAWDOWN

80%
POSITIVE YEARS

Confidential — February 2026

Executive Summary

RigaCap is a **fully autonomous, AI-driven equity trading platform** that identifies high-conviction momentum breakouts across 6,500+ US stocks. Unlike traditional quantitative systems that rely on static rules, RigaCap continuously adapts to changing market conditions using a proprietary 7-regime market classifier and Bayesian parameter optimization.

The platform's **ensemble strategy** — combining DWAP timing, momentum quality ranking, and volume confirmation — has been validated through rigorous walk-forward testing with **zero hindsight bias**, producing a 289% cumulative return over 5 years (31% annualized).

In February 2026, RigaCap launched its **"We Called It" content engine** — an AI-powered social media pipeline that uses Claude to generate timely, news-aware posts from real walk-forward trade results, complete with branded chart cards and automated scheduling.

> **Key Differentiator:** Every return figure cited in this document is from walk-forward validation — the system was tested on data it had never seen during optimization. This is the gold standard for trading system verification, eliminating overfitting concerns.
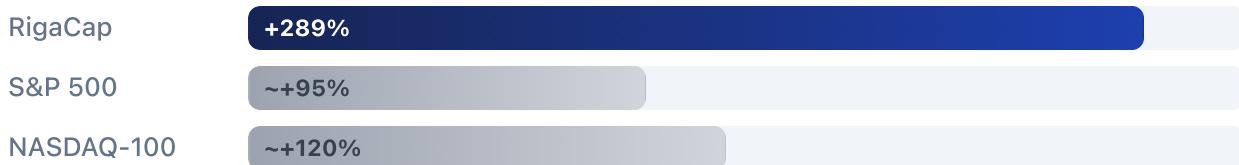
Walk-Forward Performance (2021–2026)

Biweekly reoptimization across 5 years. Each period uses only historical data for parameter selection, then trades forward into unseen market conditions.

PERIOD	RETURN	SHARPE	MAX DRAWDOWN	MARKET CONTEXT
2021–2022	**+62.0%**	1.21	-14.8%	Post-COVID rally, meme mania
2022–2023	**-13.2%**	-1.38	-15.1%	Fed rate hikes, tech selloff
2023–2024	**+22.2%**	1.02	-13.6%	AI-driven recovery

PERIOD	RETURN	SHARPE	MAX DRAWDOWN	MARKET CONTEXT
2024–2025	+20.7%	0.89	-13.7%	Election volatility, rate cuts
2025–2026	+87.5%	2.32	-8.3%	Strong bull, tariff recovery
5-Year Total	+289%	1.02 median	-15.1%	—

RigaCap vs. Benchmarks (5-Year Cumulative)

RigaCap	+289%
S&P 500	~+95%
NASDAQ-100	~+120%

How It Works: The Ensemble Approach

RigaCap's production strategy requires **three independent factors** to align before entering a trade, dramatically reducing false signals:

1. DWAP Timing

Price must break 5% above its 200-day volume-weighted fair value — a statistically significant breakout signal refined from 127 legacy stored procedures.

2. Momentum Quality

Stock must rank in the top momentum tier via a composite score: short (10d) × 0.5 + long (60d) × 0.3 – volatility × 0.2.

3. Volume Confirmation

Requires 1.3× average volume spike and proximity to 50-day high — institutional participation confirmed.

4. Adaptive Exit

12% trailing stop from high water mark, adjusted by market regime (8–20%). Winners run; losers are cut quickly.

Portfolio Construction: Maximum 6 concentrated positions at 15% allocation each. Biweekly rebalancing. This concentration in high-conviction signals is a key driver of outperformance vs. diversified approaches.

7-Regime Market Intelligence

The platform classifies market conditions into 7 distinct regimes using a multi-factor model analyzing SPY trend, VIX percentile, market breadth, new highs/lows, and momentum acceleration. Strategy parameters **automatically adapt** to each regime:

Strong Bull	**Weak Bull**	**Rotating Bull**	**Range-Bound**
Tight stops, max positions	Balanced approach	Diversify, sector aware	Reduce size, wait

Weak Bear	**Panic / Crash**	**Recovery**	**+ Forecasting**
Tighter stops, fewer signals	Defensive: go to cash	Gradual re-entry	1–2 week outlook

The regime detector also provides **transition forecasting** — computing indicator trajectories (VIX delta, breadth acceleration, trend momentum) to predict where the market is heading in the next 1–2 weeks, enabling proactive risk management rather than reactive.

AI & Machine Learning

Bayesian Parameter Optimization (Optuna TPE)

Every two weeks, the platform runs **Optuna's Tree-structured Parzen Estimator** (TPE) to intelligently search the continuous parameter space. Unlike brute-force grid search, TPE models the probability of improvement and focuses exploration on high-promise regions:

- **~30 trials per optimization cycle** across 6+ dimensions (stops, sizing, momentum windows, volatility penalties)
- **Regime-aware constraints:** In panic markets, trailing stops are floored at 15%+; in strong bull, as tight as 8%
- **Warm-starting:** Previous period's best parameters seed the first trial, ensuring continuity and cutting optimization time ~30%
- **Multivariate modeling:** Captures correlations between parameters (e.g., wider stops pair with smaller positions)

Adaptive Strategy Scoring

Strategy performance is scored differently depending on the current regime. Bear markets heavily weight drawdown control; bull markets weight returns:

METRIC	BULL WEIGHT	BEAR WEIGHT	SIDEWAYS WEIGHT
Total Return	35%	15%	15%
Sharpe Ratio	25%	20%	35%
Max Drawdown	15%	35%	20%
Sortino Ratio	15%	20%	20%
Profit Factor	10%	10%	10%

Automatic Strategy Switching

The auto-switch service runs biweekly, evaluating all strategies against the last 60 days of market data. If the AI discovers a parameter set scoring 10+ points above the current

strategy, it switches automatically. Safeguards include a 14-day cooldown between switches and full audit trails with admin email notifications.

Walk-Forward Validation (Anti-Overfitting)

The system divides 5 years of history into overlapping periods. At each boundary, it reoptimizes using only past data, then trades forward into unseen data. This produces an **out-of-sample equity curve** — the 289% return is on data the optimizer never saw.

Metrics tracked per period: Sharpe, Sortino, Calmar, profit factor, win rate, max consecutive losses, recovery factor, Ulcer index. The system logs every parameter change and strategy switch for full investor transparency.

"We Called It" Content Engine NEW

RigaCap's latest capability transforms walk-forward trade results into compelling, timely social media content. The system uses **Claude AI** (Anthropic) to generate brand-consistent posts that connect real trading results to current market events — building credibility and driving subscriber growth.

AI Content Generation

Claude generates witty, data-driven posts from real trade data. Each post type (trade result, missed opportunity, "we called it") has tailored prompts for Twitter and Instagram.

News-Aware Messaging

Integrates real-time news headlines via yfinance, connecting profitable exits to breaking news with a "we saw that coming" angle — without hype or financial advice.
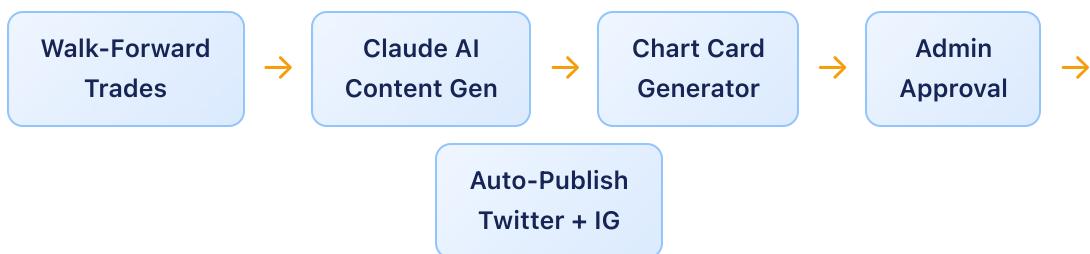
Branded Chart Cards

1080×1080 Instagram-ready chart cards with price charts, entry/exit markers, return badges, and gold-accented branding — generated server-side via matplotlib.

Admin Approval Pipeline

24-hour and 1-hour pre-publish notifications with one-click cancel links. JWT-signed email buttons let admins kill posts without logging in.

Content Pipeline Flow

Walk-Forward Trades → Claude AI Content Gen → Chart Card Generator → Admin Approval →

Auto-Publish Twitter + IG

Post Types

TYPE	PURPOSE	TIMING
Trade Result	Celebrate a winning trade with entry/exit details and return percentage	1–2 days after exit
Missed Opportunity	FOMO-angle post showing the return non-subscribers missed	2–3 days after exit
"We Called It"	Connects trade result to breaking news — proves the signal anticipated the move	When matching news breaks

Real Example (Jan 2026): SLV delivered +17.3% in 11 days. Our signal fired Jan 5 at $69.08, exit Jan 16 at $81.02. The "We Called It" engine connected this to the precious metals rally and generated platform-specific posts for Twitter (186 chars) and Instagram (591 chars) with branded chart cards.

Recent AI-Generated Trade Results (Jan 2026)

SYMBOL	ENTRY	EXIT	RETURN	DAYS
SLV (iShares Silver)	$69.08	$81.02	+17.3%	11
MU (Micron Tech)	$312.15	$362.75	+16.2%	11
RKT (Rocket Mortgage)	$21.10	$23.24	+10.1%	11

Deep Intelligence Suite `NEW`

Beyond signal generation, RigaCap provides institutional-grade trade intelligence that continuously improves system performance and subscriber confidence.

AI Trade Autopsies

Every closed trade receives a Claude-powered forensic post-mortem analyzing entry timing, exit execution, and market regime impact. Each autopsy includes a verdict, score (1–10), and actionable lesson for system improvement.

Ghost Portfolios

Three parallel universes run alongside our model portfolio with different parameters (aggressive, conservative, top-3 concentrated). We prove in real-time that our chosen configuration outperforms alternatives.
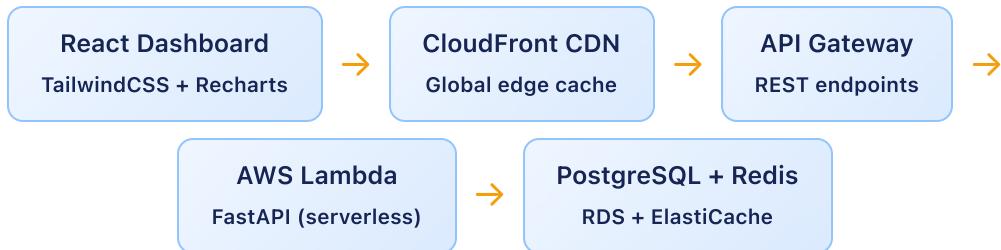
Regime Shift Forecast

Our 7-regime market intelligence doesn't just detect—it predicts. Daily probability forecasts with historical accuracy tracking give subscribers early warning of market regime shifts.

Personalized Impact Calculator

Every subscriber sees exactly what following our signals would have earned them, calculated from their signup date, compared against the S&P 500. Shareable results drive organic word-of-mouth growth.

Platform Architecture

| React Dashboard
TailwindCSS + Recharts | → | CloudFront CDN
Global edge cache | → | API Gateway
REST endpoints | → |

| AWS Lambda
FastAPI (serverless) | → | PostgreSQL + Redis
RDS + ElastiCache |

Data Pipeline

- **6,500+ US equities** scanned daily
- **20+ years** of historical OHLCV data
- Split/dividend-adjusted prices
- S3-cached universe with 7-day TTL
- 45+ technical indicators per stock
- Pre-computed dashboard JSON on CDN

Operational Cadence

- **Daily 4 PM ET:** Full market scan
- **Daily 5 PM ET:** Breakout alert check
- **Daily 6 PM ET:** Subscriber email digest
- **Daily 8 PM ET:** Walk-forward + social posts
- **Every 15 min:** Auto-publish scheduled posts
- **Biweekly:** AI reoptimization

Subscriber Experience

Buy Signals

Ensemble-validated picks with momentum rank, DWAP strength, and confidence score. Fresh signals marked "BUY NOW" with pulsing indicator.

Market Regime

Current regime classification with color-coded severity, SPY level, VIX reading, and 1–2 week directional forecast.

Portfolio Guidance

Position-level sell signals, trailing stop distances, and regime-based exit recommendations for open positions.

Missed Opportunities

Stocks that triggered signals but weren't purchased, showing the return left on the table — a powerful conversion tool.

Risk Management Summary

6	**15%**	**12%**	**7**
MAX POSITIONS	PER-POSITION SIZE	TRAILING STOP	REGIME STATES

Downside Protection: During the 2022–2023 bear market (S&P 500 down ~20%), RigaCap's regime detector triggered defensive positioning, limiting the drawdown to -15.1%. The system recovered and was profitable again within 12 months.

Growth Engine & Roadmap

RigaCap is positioned for rapid subscriber growth through a combination of social proof, automated content, and conversion-optimized funnels.

Current Capabilities (Launched)

95+ API ENDPOINTS	**18** DATABASE TABLES	**22+** BACKEND SERVICES

Revenue Model

PLAN	PRICE	FEATURES
Monthly	$20/month	Daily signals, email alerts, portfolio guidance, market regime
Annual	$200/year	Same features, 2 months free (save $40)
Trial	7 days free	Full access, credit card required (Stripe-managed)

Roadmap to 5,000 Subscribers

● **Phase 1: Social Proof (In Progress)**
AI-generated social content from real trades, branded chart cards, automated posting pipeline with admin approval

● **Phase 2: Organic Growth**
Public track record page, referral program ("give a month, get a month"), onboarding email drip (5-7 day sequence)

● **Phase 3: Retention & Engagement**
User performance dashboard (personal ROI tracking), cancel survey + win-back emails, usage-based retention alerts

● **Phase 4: Scale**

SEO/content strategy (blog, market commentary), paid acquisition (Google Ads, social ads), institutional tier

Authentication & Security

User Authentication

- Google OAuth + Apple Sign In
- Email/password with bcrypt hashing
- JWT tokens (15-min access, 7-day refresh)
- Cloudflare Turnstile bot protection
- Secure password reset via email

Infrastructure Security

- CORS whitelist (rigacap.com only)
- Private S3 buckets (no public signal data)
- Admin-only routes with email allowlist
- HTTPS everywhere (ACM certificates)
- Stripe-managed payment security (PCI DSS)

RigaCap

Adaptive AI Trading Platform — rigacap.com