KaxaNuk
Sharing knowledge

KN Hack 2026

Speaker Day and Research Challenge

- On June 4th - 6th we put **world-class investment ideas** in front of **200+ peers** — investment professionals and students from the leading universities of Mexico.
- **17 teams** presented realistic, fully-built investment strategies — tested with scientific rigor on real market data and grounded in the field's most authoritative quantitative research.
- **The result**: an event **without precedent in Mexico** and global in caliber — convening current and future investors who put the methods of Wall Street's most sophisticated funds into practice.

The Hackathon in numbers

200+ Attendees	**35+** Teams	**17** Strategies scientifically tested	**3** Winning teams	**10+** Participating universities
17 Speakers	**6** Panels	**8** Faculties of knowledge	**25+** Research papers cited	**6** Industry judges from CDMX & NY

Executive Summary

Every investor holds beliefs about how markets behave. The harder question, and the one this paper is built around, is **how anyone comes to know those beliefs are true**: where they originate, how they are tested, and what changes when artificial intelligence enters the decision-making process. The answer that runs through this paper is that the **scientific method does not replace human judgment in investing, it governs it**. Intuition, emotion, and conviction remain legitimate inputs to research; what the scientific method adds is the discipline that ensures each of those inputs moves reasoning toward truth rather than away from it.

This paper synthesizes the ideas developed across the KaxaNuk **KN Hack 2026 Speaker Day and Research Challenge**, held June 4–6, 2026 in Cholula, **where more than 200 participants examined the modern investment process step by step**. The themes they addressed, **feature engineering, strategy design, trading implementation, portfolio management, and entrepreneurship**, are not a loose collection of topics. They are the consecutive stages of a single research pipeline and each is governed by the same underlying question: how do you distinguish a real signal from an artifact of your own process?

Together, these themes describe a profession in transition. The discretionary craft of research and its systematic execution are converging. The rigor, reproducibility, and auditability have shifted from optional virtues to the conditions of credibility. This paper traces that argument through each stage of the pipeline and closes by showing how a unified research infrastructure, the **KaxaNuk Research Lab**, makes the scientific method the default mode of work rather than the exception

> *The investment research process is discretionary at design and systematic at scale. Scientific principles connect the two.*

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1. Context

The ideas in this paper emerged from the KN Hack 2026 Research Challenge, convened under the theme ***"Challenge What You Believe About Markets"***. The motivating observation is that artificial intelligence is now advancing faster than the financial industry can absorb it. New tools, datasets, and strategies are arriving simultaneously, while much of the profession still operates from frameworks and assumptions that predate this shift, opening a gap between what the industry needs and what practitioners actually know. The work assembled here is an attempt to map that gap precisely to describe what closing it requires.

Two commitments shaped this discussion and are carried throughout this paper. The first is a bias toward **work that holds up under real conditions** rather than work that merely presents well. Ideas were pressed on whether they made sense, whether they could actually run, whether AI was used substantively rather than decoratively, and whether their authors could explain why they worked. The second is the conviction that **structure in quantitative research, reproducibility and accessibility, is not an academic nicety** but the practical foundation of defensible investment work.

1.1 Contributors

The perspectives synthesized here were contributed by practitioners drawn from institutions where modern investment research is built and operated, including Tequila Capital, MSCI, Banamex, Finamex, Valmex, Epsilon Re, Fondo de Fondos, Catapulta, Cincel and LMR Partners. Their contributions, organized by theme, appear below.

Theme	Contributors
The Governing Question	Daniel Barrera — Senior Quant Researcher, LMR Partners; MFE, UC Berkeley
Feature Engineering	Mariana Alva (MSCI) · Rubén Flores (KaxaNuk) · Carlos Ruiz (Colegio de Matemáticas Bourbaki) · Wellcome Peujio (El Colegio de México)
Strategy Design	Mónica Lozano (BBVA) · Juan Mendoza (ex-MSCI) · Sebastián Blanco (KaxaNuk) · Mariana Alva (MSCI)

Theme	Contributors
Trading Implementation	Alejandro Betancourt (Finamex) · Marlene Galván (Banamex) · Arturo Aguilar (KaxaNuk)
Portfolio Management	Luis de Villa (Tequila Capital) · Alan Vazquez (Valmex) · Alan Nicolai (Epsilon Re) · Andrés Cuéllar (ex-Principal)
Entrepreneurship in the AI Era	Daniel López (Catapulta) · Fernando Vera (Cincel) · Salvador Orozco (Fondo de Fondos) · Arturo Aguilar (KaxaNuk)

2. The Governing Question — But How Do You Know?

Beliefs about markets have to come from somewhere, have to be testable, and have to survive the arrival of AI in the decision process. Answering this requires a distinction that is easy to blur between the **faculties through which humans acquire conviction** and the **method that disciplines them**. Conviction is not the enemy of rigor, ungoverned conviction is.

2.1 Eight Faculties of Knowledge

Conviction about markets is formed through eight human faculties: perception, reason, emotion, language, memory, intuition, faith, and imagination. Three of these emotions, intuition, and faith, are routinely dismissed in quantitative settings as unscientific. The more useful view is the opposite. They are legitimate and often decisive sources of insight, provided they are governed rather than suppressed.

Faculty	In the market	Illustration
Emotion	Market sentiment	Fear is a buy signal; greed is a warning.
Intuition	Strong conviction	A physical sensation that precedes a practitioner's best trades.
Faith	Long-horizon evidence	Holding a value thesis through a lost decade, that is faith.

The central claim is that **the scientific method does not replace these faculties — it governs them**. Its role is to ensure that every faculty moves reasoning toward truth rather than against it. Emotion, intuition, and faith become dangerous only when they operate without a process that can check them. When subjected to evidence and falsification, they become inputs that a rigorous process can safely absorb.

> *The scientific method does not replace the faculties of conviction. It governs them — ensuring each one moves reasoning to*

2.2 The Method as a Loop

The scientific method is best understood not as a one-time test but as a governing loop that recurs throughout the research process across four movements:

1. **Hypothesis**: articulate why a belief should hold.

2. **Evidence**: gather data capable of supporting or contradicting it.
3. **Falsification**: actively try to break the hypothesis, asking first whether it is even falsifiable.
4. **Revision**: update, self-correct, and reinforce the foundations.

Two failure modes threaten this loop. The first is the **confirmation cycle**: when a process seeks only evidence that supports what it already believes, faster computation and larger models merely produce more confidence at greater scale. AI, having no judgment of its own, accelerates this failure rather than preventing it. The second is the temptation to overvalue prediction. The **value of research lies in the construction, not the forecast**: a well-built, falsifiable, honestly-tested process is worth more than any single prediction, because rigorous statistics, humility, and honesty are what allow a process to survive contact with reality.

This is the connective tissue of everything that follows. Each stage of the investment pipeline from the construction of a single feature to the formation of an entire firm is the same scientific loop applied to a different problem.

3. The Research Pipeline — From Data to Decision

The themes that follow are sequenced to trace a complete investment research pipeline. This is not an abstract taxonomy: it is the same modular architecture operationalized in the **KN Research Lab**, in which external data sources flow through feature engineering, into analytics benchmark portfolios, alpha signals, factor models, then onward through portfolio construction, backtesting, and attribution analysis, ending in investment strategies. The discipline and the tooling describe the same process from two angles: one from the practitioner's judgment and the other from the infrastructure that makes that judgment reproducible. A single question recurs at each stage, restated in the terms of that stage.

Pipeline Stage	The Recurring Question	Research Lab Component
Feature Engineering	Does this feature capture a real economic phenomenon, or an artifact of the data?	Data Curator

Pipeline Stage	The Recurring Question	Research Lab Component
Strategy Design	Does this backtest show real alpha, or patterns found in historical noise?	Portfolio Construction · Backtest Engine · Attribution
Trading Implementation	Is the trader's edge real experience, or survivorship bias dressed as intuition?	Execution layer · real-time signal validation
Portfolio Management	Do you test your market beliefs, or only seek evidence that confirms them?	Benchmark Portfolios · Factor Models · Attribution
Entrepreneurship	Is the problem your venture solves real, or the one you wish existed?	The firm as the outer loop of the same method

4. Feature Engineering — Turning Economic Intuition into Testable Variables

The foundation of any quantitative process is the construction of features. It carries a deceptively hard question: *how do you know that a feature you built captures a real economic phenomenon and is not merely an artifact of your data?* A second question precedes it, how does an economic intuition become a measurable, testable variable in the first place?

4.1 From Intuition to Operational Variable

Feature construction is best treated as a disciplined translation from belief to measurement, proceeding through four steps that mirror the scientific loop:

1. **Economic hypothesis**: articulate why this variable should predict returns. The hypothesis is the point of origin; without a clear statement of the problem being solved, the rest of the process has no anchor.
2. **Operationalization**: define the precise calculation: the observation window, the normalization, and the direction of the expected effect.

3. **Statistical validation**: test whether the relationship is distinguishable from noise, rather than assuming it because it is intuitive.
4. **Interpretability**: confirm that the feature actually captures what the hypothesis claimed, closing the loop back to the original economic reasoning.

The first real complication in feature engineering is **accessing information and the capacity to obtain the right data to solve the problem at hand**. This makes clarity about the question knowing and defining what one is actually trying to solve the true starting point. The workflow proceeds by searching, defining, verifying, simulating and finally structuring with intuition treated as a signal about which external factors and variables might matter, not as a substitute for testing. Information, intuition, and the willingness to reject a candidate variable together produce a hypothesis worth pursuing.

4.2 Factor Models, Alpha Signals, and the Role of AI

Factor models serve to decompose returns and isolate sources of risk and alpha, separating what a portfolio earns for bearing systematic exposures from what it earns through genuine skill. The same standard applies to alpha signals: a signal is real only when it survives scrutiny of the process that produced it, rather than being an artifact of that construction.

Generative AI occupies a genuinely double-edged position here. It **adds real value** by accelerating the mechanical work of building and structuring features, and it **introduces real risk** when it generates plausible-looking variables that have not been economically motivated or statistically validated. The infrastructure that makes this work more efficient today is precisely the kind that abstracts data access and standardizes pipelines, freeing the researcher to spend time on the economic hypothesis rather than on data plumbing.

> *A feature is only as trustworthy as the hypothesis behind it and the test it survived. Intuition proposes; falsification disposes.*

5. Strategy Design — Distinguishing Alpha from Historical Noise

Moving from individual features to complete strategies surfaces the question that quietly destroys most quantitative work: *how do you distinguish a backtest that shows real alpha from one that has simply found patterns in historical noise?*

5.1 Representing the Generality of the Process

A strategy must **represent the generality of the process** rather than fit the idiosyncrasies of a particular sample; it has to adapt to new algorithms and regimes. This points to a caution called the *"virtue of complexity"*: added complexity is justified only when it reflects a genuine transformation of the data, never when it merely improves the appearance of past performance.

Reflecting reality demands robust testing and calibration confirming the transformation is real, with explicit attention to whether the process is over- or under-estimating the effect it claims to capture. Being able to maintain that grip on reality is the entire purpose of disciplined backtesting and active control of overfitting.

5.2 Portfolio Construction and Rigorous Backtesting

In portfolio construction, the frameworks that survive outside the page differ sharply from those that work only in theory. Strategies typically fail in practice at four concrete points:

1. **Rebalancing**: handling the temporal structure of decisions correctly.
2. **Turnover**: accounting honestly for implementation costs.
3. **Operational efficiency**: for example, the interaction of momentum with the practical realities of execution.
4. **Attribution factors**: understanding the volatility and exposure that actually drive results.

Problems with investment strategies typically originate from a **disconnection between reality at the moment of creation and simulation**, a process built to look backward rather than to predict forward. Mitigating this means controlling for risks such as temporal leakage, null or missing data, shifting benchmarks, leading to separating each step and calculation so the methodology can be established before it is applied. The governing discipline associated with the rigorous-backtesting literature is to *understand the process before subjecting it to tests*. This is so a backtest becomes an honest examination of reality rather than a search for the result one hopes to see.

5.3 Attribution Analysis

This raises the question of why one decomposes return into factors at all, what attribution tells you that gross P&L cannot. A total-return figure conflates market beta, factor tilts, and true skill. Attribution separates them, revealing whether a strategy's performance reflects genuine alpha or simply rewarded exposures, and in doing so makes performance defensible to clients and auditors rather than merely asserted.

> *Success lives in the construction, not in the prediction. A strategy you understand and can decompose is worth more than one that merely backtests well.*

6. Trading Implementation — Edge, Automation, and the Human Check

Where strategies meet live markets, the question turns inward, onto the trader's own self-knowledge: *how does a trader know whether a strategic criterion is real experience, or survivorship bias disguised as intuition?* Answering it requires understanding how trading desks have evolved, how technology reshaped the sources of edge, and how AI is being used in execution today.

6.1 The Evolving Desk

The profession has been transformed by technology and by global complex markets, a shift toward diversification and efficiency that the rise of ETFs exemplifies. The decisive change is that the **voice broker lost the informational advantage**: where edge once came from privileged access to information, execution is now measured in milliseconds and dominated by machines. At the same time, alternative data has changed fundamental analysis, particularly in commodities, shifting where human judgment adds value. The modern desk increasingly fuses strategy (research) with operation (trading), raising expectations for both the knowledge a desk must hold and the value it adds in execution through personalization, more competitive service, and the programming skills required to operate efficiently.

6.2 The Three-Layer Anatomy of the Desk

A useful way to see the modern desk is as three layers operating at different time horizons:

Layer	Time Horizon	Role
Algorithmic execution / HFT	Microseconds to nanoseconds	Market making, latency arbitrage. Pure algorithms; no human intervention.
Tactical management	Seconds to minutes	Signal validation and real-time risk. The system generates a signal; a human validates or rejects it.
Strategy & relationship	Hours to weeks	Client relationships and solution design. A human applying macro, relational, and strategic judgment.

6.3 AI in Execution — Detect, then Decide

Two concrete uses of AI in execution share consistent principles. **Real-time NLP signals**, large language models monitoring news, earnings calls, and social feeds to raise alerts — giving the trader earlier awareness, but the trader must know when to trust a signal and when context invalidates it. **Anomaly detection**, AI monitoring unusual liquidity, spreads, and order flow surfaces conditions a human would miss. In both cases the division of labor is identical: **the system detects, the human decides**. Automation extends reach, but a final human check on validated signals remains the safeguard against acting on a pattern the machine cannot contextualize.

> *The system detects; the human decides. AI removed the broker's informational edge — it did not remove the need for judgment.*

7. Portfolio Management — The Scientific Method Applied to Conviction

Managing capital returns directly to the governing question: *do you use the scientific method to validate your beliefs about the market, or do you only look for evidence that confirms them?* This is the confirmation-cycle failure applied to the discipline of allocation.

7.1 Client-Aligned Parameters and the Investment Process

Portfolio management is grounded in parameters that are aligned and focused on the client beginning from the client's profile to deliver personalization and better service. The process moves

from **identifying and knowing the client, to planning the allocation, finally to defining strategy** with legal parameters and conditions governing the portfolios throughout. Its central challenges are knowledge of the instruments (research), tuning to a changing market, and sensitivity to the underlying investment models and its core discipline is to establish a hypothesis and evaluate it against an explicit list of conditions and factors, supported by documentation, analysis, and a clear investment criterion.

Portfolio behavior sits along the spectrum of allocation approaching from strategic asset allocation through dynamic asset allocation and maintaining discipline in a dynamic market means reasoning through scenarios rather than reacting to them. This is the systematic-versus-discretionary tension made operational: opportunities are replicated systematically while judgment is retained to adapt as regimes change.

7.2 The Future of Portfolio Management

Five capabilities increasingly define the discipline:

- **Dynamism**: constant change in scenarios, demanding adaptability.
- **Decision capacity**: backed by critical thinking rather than reflex.
- **Hypothesis testing**: treating investment ideas as trial and error, with error as information.
- **Emotional intelligence**: the discernment to reason and act under pressure.
- **Learning to use new tools**: including AI agents as a matter of integration into the existing process.

Notably, the discussion stopped short of triumphalism. **Openly acknowledging that the institutional model still has gaps** becomes an honest admission that the scientific posture argued for here applies as much to the design of investment committees and institutions as it does to individual strategies.

> *A market belief that cannot be tested is not a thesis — it is a preference. Portfolio management is the practice of telling the two apart.*

8. Entrepreneurship in the AI Era — Is the Problem Real?

Widening the lens from strategies to firms applies the scientific method to venture-building itself: *how do you know that the problem you solve is real, and not the problem you wish existed?*

8.1 The Mexican Context and the Anatomy of Failure

There is a specific need in Mexico to **formalize high-impact entrepreneurship with financing** so that it can grow and contribute economically. Ventures fail for identifiable reasons: poor reinvestment of capital and financing; how the team is composed; and adaptability as well as the

ability to function under real-world conditions of preference, consumption, and competition. The unifying requirement is that the founder must **understand and sustain the company's vision** through the team, and must validate that the problem exists in the world rather than only in the pitch.

8.2 AI as Enabler, and the Credibility Problem

AI is most usefully understood here as an **enabler within the business model**: a set of technological tools that supply dynamism with less effort and friction, lowering technological barriers. But that same accessibility carries a corresponding risk, **lower credibility and concentrated financing**, compounded by a lack of a professional critical mass that can justify and validate ventures. The response is to build community and visibility of investment and information, precisely the function an ecosystem-building event performs.

> *AI lowers the cost of building the wrong thing as easily as the right thing. The scientific question — is this problem real? — is the founder's first and hardest test.*

9. Synthesis — One Method Across the Pipeline

Taken in sequence, these stages compile into a single argument. **Feature engineering** establishes how an economic intuition becomes a testable variable and how rigorous backtesting separates signal from artifact, while leaving genuine, unresolved disagreement about the limits of automated machine learning. **Strategy design** carries the same standard into portfolio construction and backtest validity, insisting that success lives in the construction rather than the prediction. **Trading implementation** traces the evolution of the desk by asset class and builds an explicit bridge between the research backtest and live execution. **Portfolio management** formalizes the scientific method as applied to capital, maps the systematic-discretionary

spectrum, and openly concedes the gaps in the institutional model. **Entrepreneurship** extends the method to the formation of firms themselves.

The throughline is the governing question. At every stage, feature, strategy, execution, portfolio, and firm it recurs in different clothing: *how do you know what you claim to know, and what process would tell you if you were wrong?* The faculties of conviction are present at every stage; the scientific method is what keeps them honest at every stage.

These stages also describe one node in a longer argument about the next decade of investment-firm formation in Mexico and Latin America, one in which the **personalization × alpha** framework serves as the commercial frame and the lean, four-to-six-person firm serves as the operating model. The projects built under real constraints during the challenge stand as working evidence beneath that thesis: concrete attempts to produce research that is correct, runnable, and explainable.

10. From Method to Practice — The Hackathon Projects

The five stages described in the preceding sections were not delivered as theory. They were delivered as a working pipeline, the same sequence from feature engineering through strategy design, validation, and attribution. Participants were asked to build real strategies on top of it over thirty-six hours. What follows is evidence of how that pipeline shaped the work: the discipline supplied the structure, and the projects show what that structure produced in practice.

10.1 The Pipeline Applied

The structure of the research process was visible in how teams reasoned. Following the feature-engineering principle, strong teams began from an economic hypothesis and only then operationalized it into a variable, rather than mining data for whatever appeared to work. Following the strategy-design discipline, they treated the backtest as an honest test rather than a search for a flattering result, controlling for the failure modes named earlier, from look-ahead bias to unrealistic costs. And following the attribution principle, the most rigorous teams could explain whether their results came from genuine signal or from rewarded exposure. The pipeline gave

participants a shared language for what a defensible strategy actually requires, and it showed in the quality of their reasoning.

10.2 Outstanding Projects

Of the seventeen teams that presented their strategies, the work below was the most outstanding, the clearest demonstration of the pipeline in practice. The path from an economic hypothesis, through feature construction and disciplined backtesting, to a result the team could explain and defend. The projects are presented beginning with the winners. The point of this section is not the headline numbers but the construction behind them. Each strategy was routed through the same stages described above, and the strongest teams could account for where their returns came from rather than merely reporting them.

#	Project	Track	Strategy (core idea)
1st	Overfitters	US Stock Picking	Regime-switching composite (IC-IR-weighted robust z-score) with momentum fallback
2nd	CDUP Finance Quant	US Stock Picking	Black-Litterman expected returns* Hierarchical Risk Parity sizing
3rd	Tabots	US Stock Picking	Quality + Momentum composite, factor-residualized, convex-optimized
	Signal Hunters	Crypto	Macro regime filter (FRED) + quality crypto selector rotating to USDT
	Alquimia	ETF Allocation	Regime-switching multi-asset via Continuous Jump Models + max-Sharpe optimizer
	Los Caimanes	US Stock Picking	Value · Quality · Momentum composite, SML alpha filter, shrinkage MVO

#	Project	Track	Strategy (core idea)
	Alpha Seekers	US Stock Picking	Liquidity-weighted trend-following (50/200 SMA), SPY regime overlay
	IndustrialCDUP “Quality Compounders”	US Stock Picking	Quality composite (ROIC, reinvestment, FCF) + momentum, buyback-amplified
	Ganadores por default	US Stock Picking	Quality-momentum bridge with dynamic risk overlay

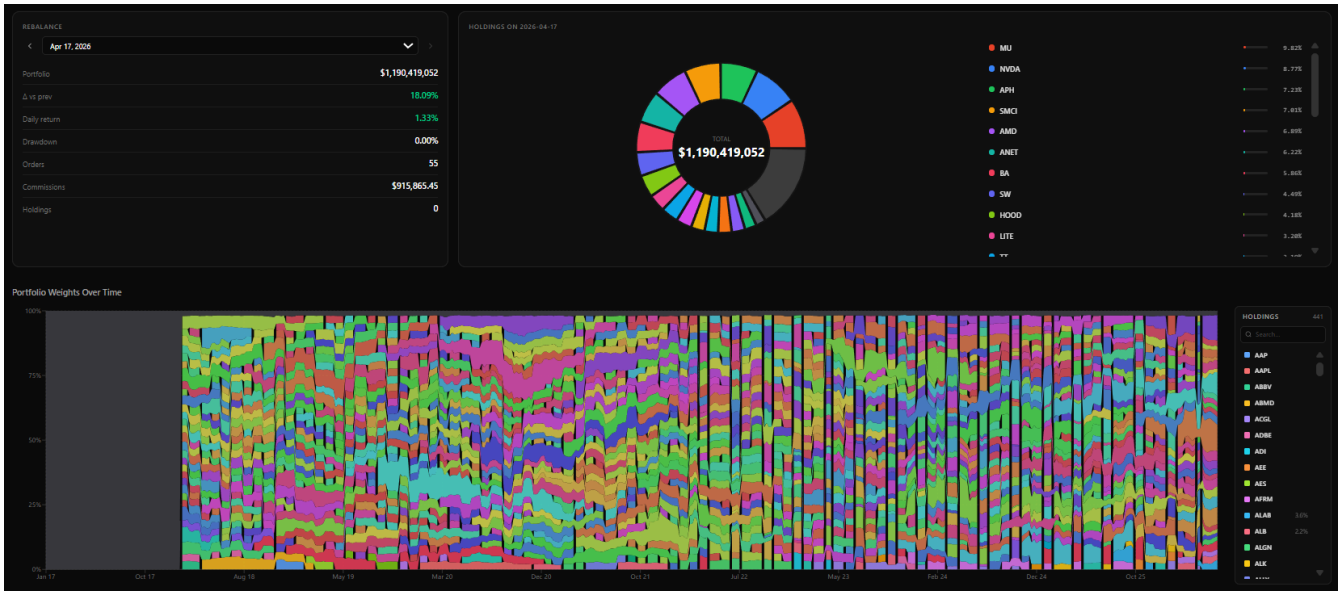
Equity strategies are benchmarked against the KN universe (2017–2026); All strategies are long-only with a single-name cap and a cash reserve; backtests start from a $100M notional.

First Place

Overfitters (US Equity Stock Picking)

A long-only US-equity book, rebalanced monthly over 2017–2026, whose distinctive move is a regime switch driven purely by data availability. When a fresh fundamental snapshot clears a point-in-time screen, it scores the universe with a sign-aware, IC-IR-weighted robust z-score across fundamental and technical features; otherwise it falls back to twelve-month momentum.

What set it apart was the rigor of its validation, a full López de Prado battery (Deflated Sharpe, Jobson-Korkie with Memmel correction, Diebold-Mariano, tail diagnostics) built to disprove the strategy rather than flatter it. **Engine-verified: CAGR 30.82% vs 15.0% benchmark, Sharpe 1.00, max drawdown −38.5%, +15.85% alpha.**



Team strategy performance generated using the KaxaNuk Backtest Engine

Second Place

CDUP Finance Quant (US Equity Stock Picking)

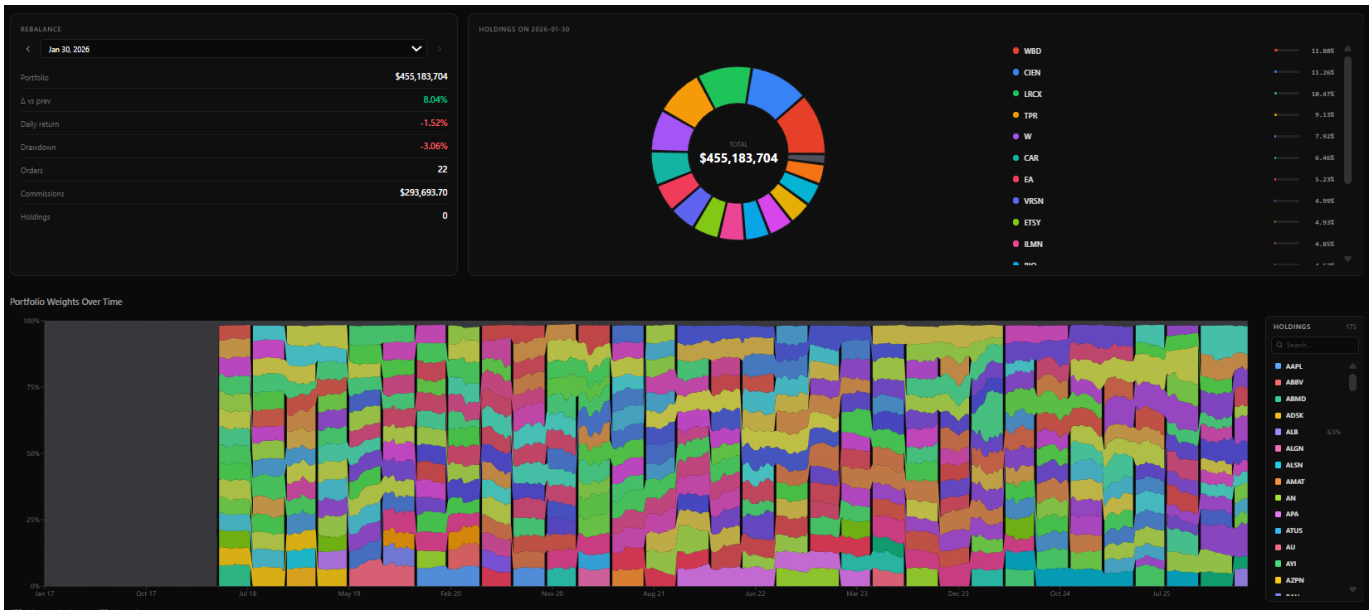
One of the most theoretically ambitious entries: a Black-Litterman posterior for expected returns paired with a Hierarchical Risk Parity allocator. The novel element is injecting the expected-return view as a directional tilt inside the HRP recursion rather than running a mean-variance optimizer — a discretionary view layer governing a systematic risk-allocation core, exactly the convergence this paper describes. **Engine-verified: CAGR 26.1%, Sharpe 1.01 over 2017–2026, max drawdown −49.53%, +12.42% alpha.**

Team strategy performance generated using the KaxaNuk Backtest Engine

Third Place

Tabots (US Equity Stock Picking)

A model of reproducible construction. A Quality + Momentum composite, standardized as a robust z-score and then residualized against the KN five-factor and industry model so the remaining signal is factor-neutral alpha rather than disguised exposure — a direct application of the attribution principle. A deterministic convex optimizer produces a long-only, quarterly, top-fifteen equal-weighted book. The codebase itself — point-in-time signals, seeded determinism, documented citations, full test coverage — embodied the reproducibility standard **Engine-verified: CAGR 16.94%, Sharpe 0.630 over 2017–2026, max drawdown −42.23%, +3.23% alpha.**



Team strategy performance generated using the KaxaNuk Backtest Engine

Signal Hunters (Crypto)

CMMR, a two-layer systematic crypto strategy. A macro regime filter built from FRED signals (the 10Y/2Y spread, M2, and the fed funds rate) acts as a switch, routing weight into a stablecoin proxy when conditions turn adverse; a five-filter quality cascade then selects assets, sized by inverse volatility under a per-name cap. It is the trading-implementation lesson in miniature — a systematic signal proposes, an explicit regime rule decides when to trust it.

Alquimia (ETF Allocation)

The most ambitious application of regime modeling, and the clearest use of jump models in the field. A long-only tactical multi-asset strategy that rotates across equity, bond, and cash ETFs using Continuous Jump Models, a clustering-based HMM variant, to infer three regime families (global equity, rates, and per-asset bull probabilities) via walk-forward estimation, sized by a max-Sharpe optimizer to a 12% volatility target. A case where the value lay in the sophistication and discipline of the regime machinery rather than in beating the benchmark.

Los Caimanes (US Equity Stock Picking)

A clean run of the full four-stage pipeline, attribution included. The KN 600 universe is enriched with nine custom signals, scored monthly on a three-pillar composite (Value, Quality, and dual price-and-fundamental Momentum) using industry-relative ranks, filtered by a Security Market Line alpha test, and sized with Ledoit-Wolf shrinkage mean-variance optimization. It closes with Brinson-Fachler and factor attribution, the discipline that separates genuine alpha from rewarded exposure.

Alpha Seekers (US Equity Stock Picking)

A disciplined liquidity-weighted trend-following strategy. Names qualify on a bullish 50/200-day moving-average crossover plus a traded-value threshold; the top twenty by 63-day average traded value are sized in proportion to liquidity. A regime overlay rotates fully into SPY when fewer than twenty names qualify, with explicit hysteresis to avoid whipsaw — a compact, internally consistent expression of a single clear hypothesis, tested over 2015–2026.

Industrial CDUP, "Quality Compounders" (US Equity Stock Picking)

One of the most fundamentally grounded entries. Stocks are scored on a composite of point-in-time fundamentals — five-year average ROIC, reinvestment rate, three-year revenue growth, and free-cash-flow margin, blended with momentum, all aligned to the filing date for point-in-time integrity. The top twenty-five names are equal-weighted with a buyback amplifier, constrained by sector and turnover limits and 15% volatility targeting.

Ganadores por default (US Equity Stock Picking)

The QMB strategy buys financially strong companies (Quality) that the market is already validating (Momentum), and controls position sizing based on market vol...The QMB strategy buys financially strong companies (Quality) that the market is already validating (Momentum), and controls position sizing based on market volatility (Risk Overlay). Quality says what to buy, Momentum says when, and the Risk Overlay says how much.

10.3 A Diversity of Approaches

Within that shared structure, the strategies strikingly varied, a sign that a disciplined process constrains rigor without constraining creativity. The field reached for genuinely sophisticated machinery: **jump models** that treat markets as moving between discrete regimes rather than evolving smoothly, **Bayesian methods** such as Black-Litterman that make uncertainty explicit and update beliefs as evidence accumulates, hierarchical risk parity, and macro-gated rotation. Each reflected a deliberate hypothesis about market behavior applied through the pipeline, which is exactly the discipline the event set out to instill. Equally telling was the quality of the academic literature teams grounded their work in: rather than relying on intuition alone, participants anchored their strategies in serious published research, bringing rigorous foundations to bear under real time constraints.

10.4 The Tools That Carried the Pipeline

The pipeline was not only a concept; it was operational, delivered through the KaxaNuk Research Lab. Teams used the **Data Curator** to connect and standardize their data sources without the manual cleaning that normally consumes most of a researcher's time, and the **Backtest Engine** to test their strategies against point-in-time data with realistic assumptions built in. This is what let participants move quickly from idea to tested result: the infrastructure absorbed the data plumbing so they could spend their hours on hypotheses and interpretation — the same shift in effort the pipeline is designed to produce.

10.5 The Breadth of the Community

The ideas came from an unusually diverse group, drawn from across Mexico's leading institutions and several states, including UAA, Tec, IPN, UP, UPAEP, Anahuac, UDLAP, ITAM, and BUAP, among others. That breadth mattered: students with different academic backgrounds and regional perspectives applied the same pipeline to different questions, and the resulting cross-pollination was itself one of the event's most valuable outputs. Participants left not only with a project, but with a shared, practical grasp of how rigorous, reproducible investment research is actually done and with a network of peers working on the same problems.

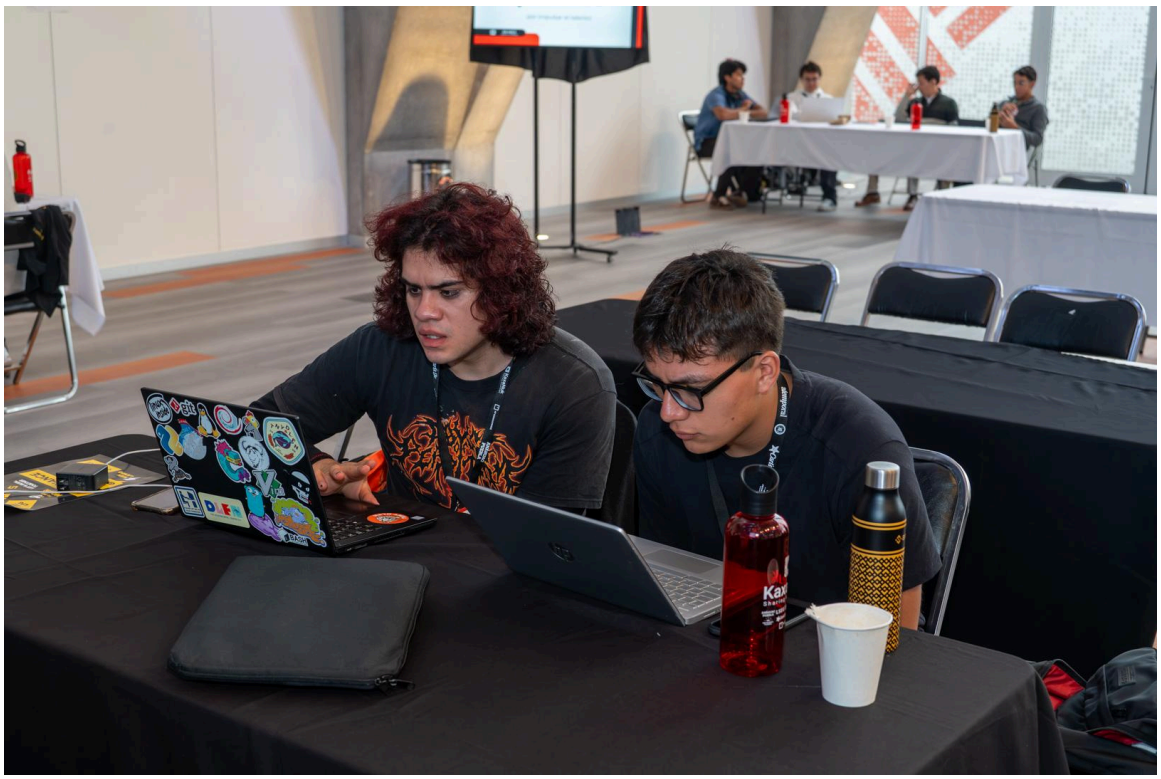
The panels supplied the pipeline; the hackathon supplied the proof. The same method that governs a feature governs a strategy — and the projects showed it works under real constraints.


BINA


LSEG


Levi's


KaxaNuk
UP




KN
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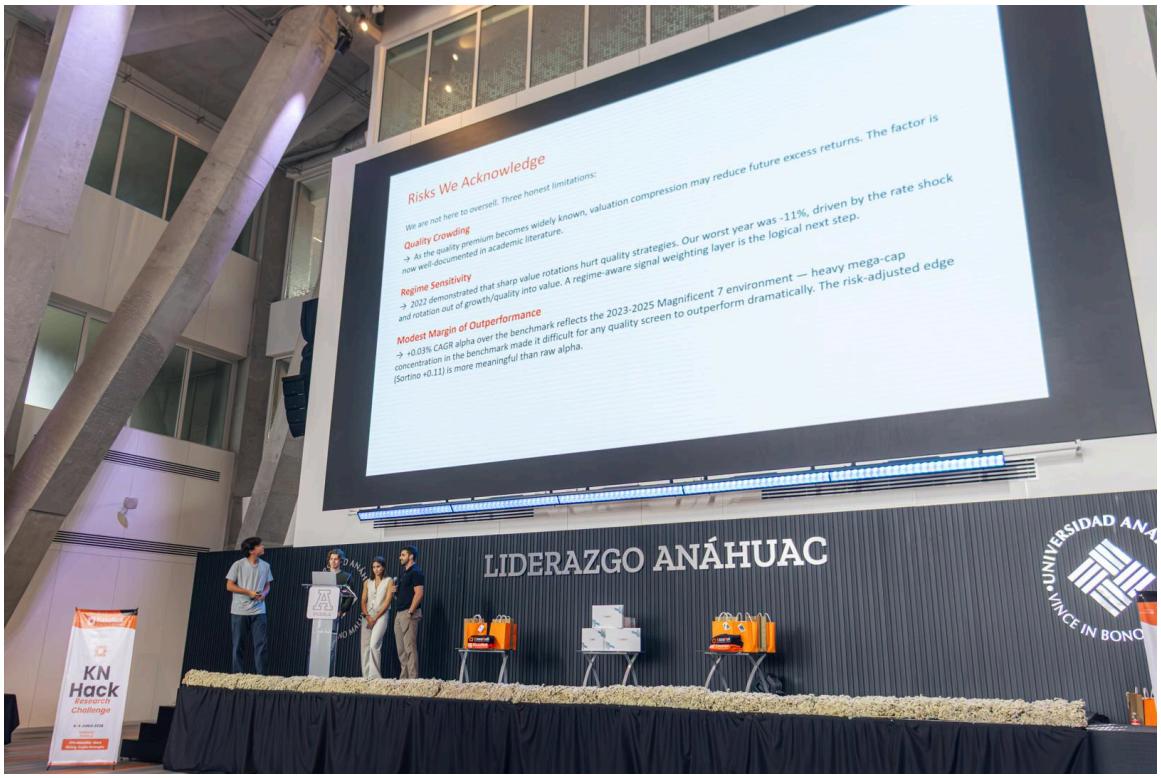
LACOSTE
I ♥ BINANCE


04 · CONCLUSIONES
25 / 28
Validación de hipótesis
Implicaciones estadísticas y consistencia.
H₀ rechazada (sin outperformance ajustado por riesgo): Sharpe 1.085 vs 0.777 , Sortino 1.389 vs 0.895.
Significancia económica: +12.88% alfa; 8.78× vs 2.68× de retorno neto en 9.2 años.
Consistencia: supera a KN600 en 6 de los últimos 7 años ; defiende en drawdowns 2018/2020/2022.
Out-of-sample: 2023-26 Sharpe 2.50 (in-sample 2017-22 Sharpe 0.49, aún positivo).
Reproducibilidad: el simulador interno coincide con el motor oficial a 3 bps de volatilidad.
CAVEAT HONESTO
El libro corre más caliente que el benchmark — vol 25.9% vs 19.5%, drawdown más profundo.
El triunfo es en retorno ajustado por riesgo ; el riesgo mayor se divulga, no se esconde.
KaxaNuk
CONCLUSIONES · TRACK 1
LIDERAZGO ANÁHUAC


Not Just Higher Returns, but Better Returns
On every risk-adjusted measure, the strategy beats the benchmark.
METRIC | STRATEGY | BENCHMARK
Annualized Return | 27.98% | 15.07%
Sharpe Ratio | 1.20 | 0.78
Sortino Ratio | 1.54 | 0.93
Alpha | +12.91% | N/A
Max Drawdown | -39.21% | -33.75%
Volatility | 23.24% | 19.27%
Deeper drawdown and volatility reflect a deliberately concentrated, high-conviction approach, fully compensated by far superior Sharpe & Sortino.
LIDERAZGO ANÁHUAC


Risks We Acknowledge
We are not here to oversell. Three honest limitations:
Quality Crowding
→ As the quality premium becomes widely known, valuation compression may reduce future excess returns. The factor is now well-documented in academic literature.
Regime Sensitivity
→ 2022 demonstrated that sharp value rotations hurt quality strategies. Our worst year was -11%, driven by the rate shock and rotation out of growth/quality into value. A regime-aware signal weighting layer is the logical next step.
Modest Margin of Outperformance
→ +0.03% CAGR alpha over the benchmark reflects the 2023-2025 Magnificent 7 environment — heavy mega-cap concentration in the benchmark made it difficult for any quality screen to outperform dramatically. The risk-adjusted edge (Sortino +0.11) is more meaningful than raw alpha.
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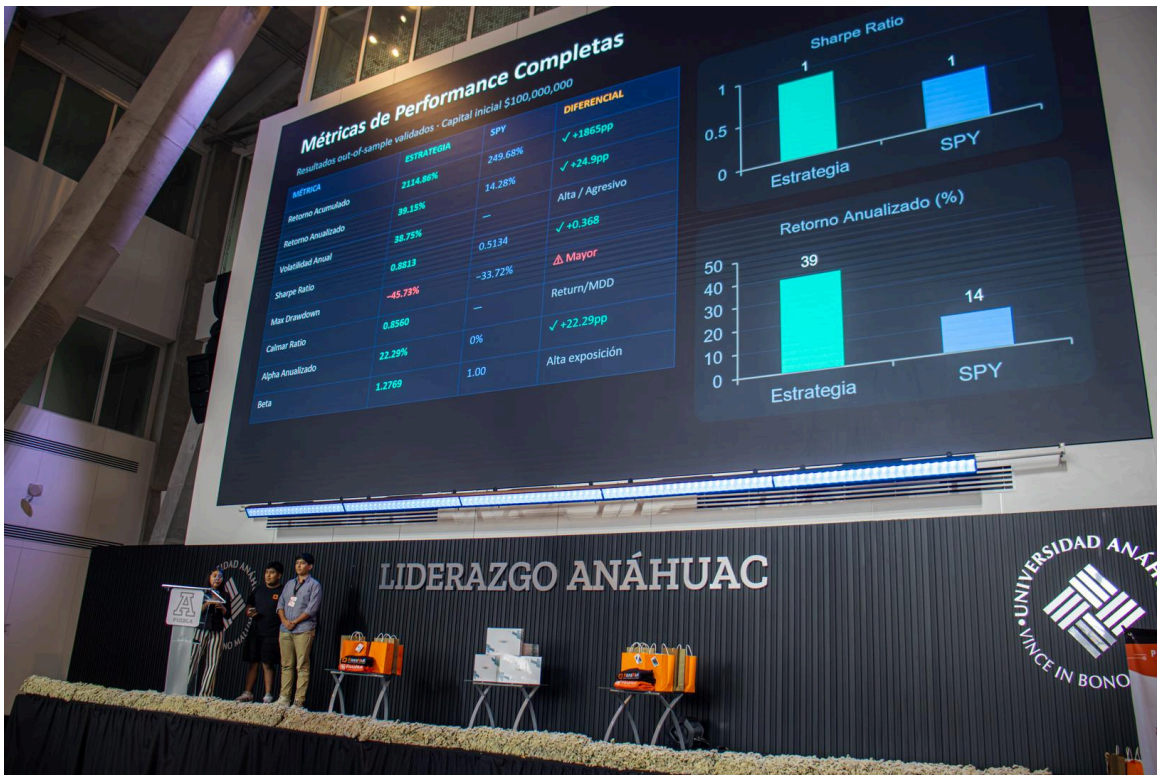
KN Hack
Research Challenge


Métricas de Performance Completas
Resultados out-of-sample validados · Capital inicial $100,000,000
MÉTRICA | ESTRATEGIA | SPY | DIFERENCIAL
Retorno Acumulado | 2114.86% | 249.68% | ✓ +1865pp
Retorno Anualizado | 39.15% | 14.28% | ✓ +24.9pp
Volatilidad Anual | 38.75% | — | Alta / Agresivo
Sharpe Ratio | 0.8813 | 0.5134 | ✓ +0.368
Max Drawdown | -45.73% | -33.72% | ⚠ Mayor
Calmar Ratio | 0.8560 | — | Return/MDD
Alpha Anualizado | 22.29% | 0% | ✓ +22.29pp
Beta | 1.2769 | 1.00 | Alta exposición
Sharpe Ratio
1
0.5
0
1
1
Estrategia
SPY
Retorno Anualizado (%)
50
40
30
20
10
0
39
14
Estrategia
SPY
LIDERAZGO ANÁHUAC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11. Why This Matters — Structure as Infrastructure

The intellectual case made across these stages has a practical corollary. If the scientific method is to govern investment research, then research teams need infrastructure that makes the method **the default rather than the exception**. Today, most of that infrastructure works against rigor rather than for it.

11.1 The Problem the Industry Lives With

The conditions described above as failure modes are, in fact, the everyday state of investment research. The cost is measurable:

Measure	What it represents
60–80%	A researcher's time is consumed by repetitive data cleaning and structuring instead of generating insight.
Zero	Audit trails: most investment research remains effectively non-reproducible.
40+	Disconnected notebooks across which a typical workflow is fragmented, with no version control and silently propagating errors.
90%	Investors never act, lacking a structured process to test ideas and defend capital.

Each of these gaps connects directly to a theme developed earlier. The *"messy middle"* is the access-to-data complication at the heart of feature engineering. The *reproducibility crisis* is the backtest-validity problem central to strategy design. The *paralysis problem*, investors who freeze for lack of a way to test hypotheses and understand worst-case scenarios, is the confirmation-cycle failure that portfolio management has to overcome.

11.2 How the KaxaNuk Research Lab Operationalizes the Method

The response is a **unified, open research stack** that spans the full investment lifecycle and makes the scientific loop structural. Its design principles answer these problems point for point:

- **Seamlessly connected**: data flows from curation through analysis, backtesting, and attribution without manual hand-offs, eliminating the silent errors of the fragmented notebook workflow.
- **Built-in reproducibility**: every research step is documented, versioned, and auditable, so strategies are independently validated rather than merely trusted. This is the falsification discipline made automatic.
- **Open architecture**: any external data provider, internal database, or analytics engine connects into one workflow; the stack connects the research ecosystem rather than replacing it, directly addressing the access-to-information complication.
- **A scientific process for decisions**: the stack embodies hypothesize, test, measure risk, iterate, replacing gut feeling with evidence and turning paralysis into informed action.

Concretely, the Research Lab moves each pipeline stage from its failure mode to an audit-ready state: from manual, untimestamped CSVs to auto-connected, versioned data; from ambiguous notebook versions to reusable pipelines with automated quality checks; from ad-hoc, undocumented weights to rules-based construction with a full audit trail; from backtests riddled with look-ahead and survivorship bias to point-in-time data with realistic costs by default; and from total-return reporting to attribution that decomposes market beta, factor tilts, and true alpha. Built under real constraints and genuine data, the projects produced during the challenge are evidence that new users can adopt this stack and produce defensible work with it under pressure.

12. Conclusion

The purpose of challenging what one believes about markets is to refuse to let belief stand unexamined. The faculties through which conviction is formed emotion, intuition, faith, and the rest are legitimate, but only when governed by a method that can reveal when they are wrong.

What that governance looks like in practice becomes concrete stage by stage: in the construction of a feature, the validation of a strategy, the execution of a trade, the management of a portfolio, and the building of a firm.

The conclusion is also the conviction on which KaxaNuk is built: that **rigorous, reproducible investment research should be accessible to everyone**, and that the gap between great ideas and the infrastructure to test them is a gap worth closing. The scientific method is the discipline; structured, open tooling is how that discipline scales. AI is not coming to investment research it is already here, and the question it leaves is the one it began with, now sharpened: *are you building a process that would tell you if you were wrong?*

From everyone at KaxaNuk, we would like to extend our gratitude and thank all of our sponsors and participants for making the 2026 KN Hack a success. We are excited about what the future holds as we hope to bring more KaxaNuk events and hackathons in the near future. Thank you everyone again for your incredible support!

Disclaimers

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