ATTRIBUTION MATRIX
BEHAVIORAL INTELLIGENCE SYSTEM

SYSTEM ONLINE | 9/9 VALIDATIONS PASSED

TACTICAL ATTRIBUTION ANALYSIS PLATFORM

Transform your behavioral data into **actionable intelligence** using rigorous mathematical models. Unlike black-box analytics, every calculation is transparent, defensible, and grounded in first principles.

Deploy advanced Markov-Shapley algorithms combined with Kelley's Covariation Model to extract behavioral intelligence from digital footprints.

THE PROBLEM WITH STANDARD ANALYTICS

✗ Last-Click Attribution
Ignores 90% of the customer journey. A user sees 5 touchpoints but only the last gets credit.

✗ Black-Box ML Models
Can't explain why. When the CFO asks "how did you calculate this?" you have no answer.

✗ Cloud-Dependent Tools
Your personal data travels to third-party servers. Privacy policies change. Data gets leaked.

PRECISION	SECURITY	SPEED	TRANSPARENCY
99.9%	LOCAL	<60s	100%
Attribution Accuracy	Zero Cloud Storage	Analysis Runtime	Explainable Results

HOW IT WORKS

1. UPLOAD — Your Data
2. PARSE — Canonicalize
3. MARKOV — Causality
4. SHAPLEY — Fairness
5. BLEND — Hybrid α
6. REPORT — Intelligence

DEPLOY TARGET FILE

Upload your data export to begin analysis

DEPLOY TARGET FILE

DROP FILE OR CLICK TO SELECT FROM SYSTEM

JSON | CSV | ZIP | TXT

SUPPORTED DATA SOURCES

Google Takeout • Facebook Export • Apple Archives • Browser History

OR TRY WITH SAMPLE DATA

LOAD DEMO DATA (5 sample journeys)

SUPPORTED DATA SOURCES

G	Google Takeout Chrome, YouTube, Search	f	Facebook Export Activity, Ads, Pages
	Apple Archives Safari, Screen Time	CSV	Custom CSV Any journey data

Accepts: JSON, CSV, ZIP, TXT • Max 50MB • All processing happens locally in your browser

THE THREE PILLARS

MARKOV-SHAPLEY

Hybrid Attribution

Combines Markov chain removal effects (causality) with Shapley value allocation (fairness). The α parameter lets you tune the balance.

Output: Channel attribution % with 95% confidence intervals

COVARIATION

Kelley's Model

Tags behaviors as dispositional (personality-driven) or situational (context-driven) using Consistency, Distinctiveness, and Consensus.

Output: Behavioral tags with psychological grounding

AI ANALYSIS

LLM Reports

Generates three reports: **Executive Summary** (insights), **Technical Analysis** (methodology), and **Risk Assessment** (limitations).

Output: Actionable recommendations + caveats

ETHICAL ARCHITECTURE

This is a Personal Epistemic Instrument—designed for self-reflection, not surveillance. We analyze **what you did**, never **what you felt**.

- Aggregate patterns
- Declared context
- No mental state inference

● LIVE DEMO

INTERACTIVE HYBRID ATTRIBUTION ANALYTICS

Experience the power of Markov-Shapley hybrid attribution with real-time visualization and advanced uncertainty quantification. Explore channel performance and journey patterns.

First-Principles Attribution Engine

Personal Epistemic Instrument v1.0.0

? How Does This Work?

A **thinking instrument** that transforms your behavioral data into actionable insights using rigorous mathematical models. Unlike black-box analytics, every calculation is transparent, defensible, and grounded in first principles.

α Blend Parameter

Current: 0.5

Control the balance between causality and fairness in attribution

Formula: Hybrid = α·Markov + (1-α)·Shapley

Shapley (Pure Fairness) — Markov (Pure Causality)

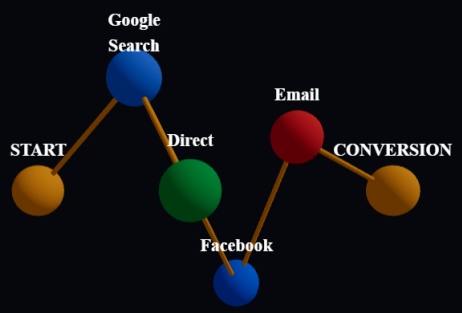
🎯 Balanced: Equal weight to causal impact and fair distribution (recommended for most analyses)

5	$425	80%	5
Total Journeys	Total Revenue	Conversion Rate	Active Channels

Journey State Machine

3D Interactive

Each node is a **Markov state**. Drag to rotate. Connections show transition probabilities between touchpoints.

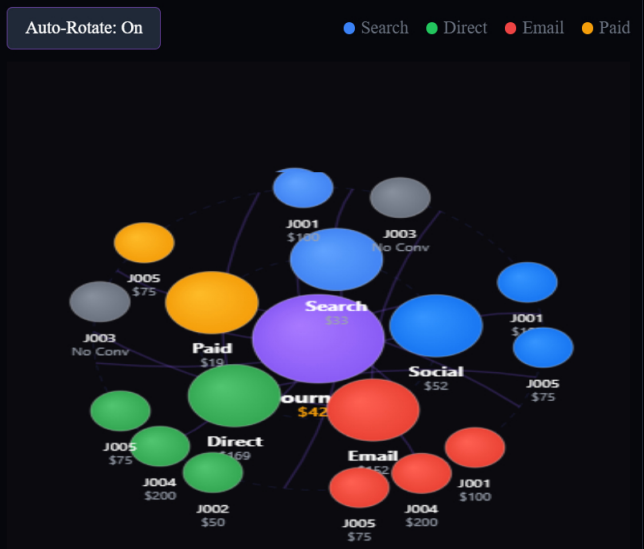


💡 **Reading this:** START → channel states → CONVERSION. The path shows how users flow through your funnel.

Channel Hierarchy

Animated

Center: All journeys → **Inner ring:** Channels → **Outer ring:** Individual journeys



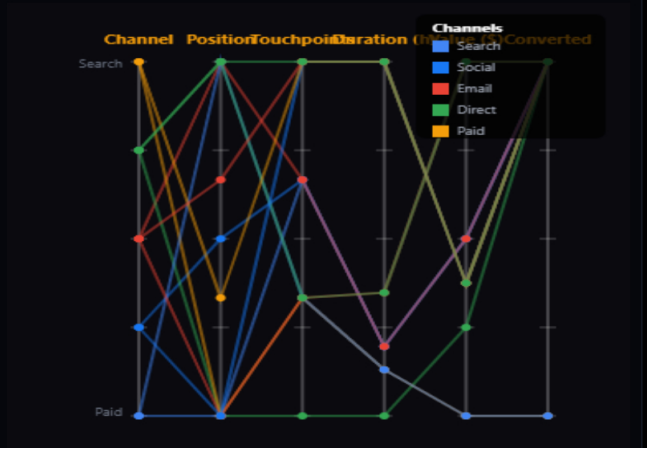
💡 **Hover** over nodes to see attributed values. Node size reflects touchpoint frequency.

Multi-Dimensional Journey View

Parallel Coordinates

Each line = one touchpoint. See how journeys traverse: Channel → Position → Touchpoints → Duration → Value → Conversion

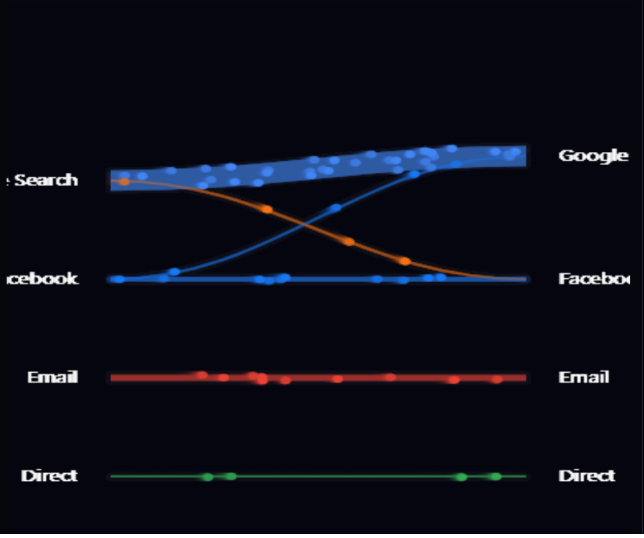
Filter: All Channels — Opacity:



Transition Flow River

Live Animation

Animated particles show **transition probability flow**. Wider streams = more frequent transitions.



💡 **Reading this:** Lines going to "Converted: Yes" (top right) show successful paths. Hover to highlight entire journey.

💡 **This is your Markov matrix visualized.** Each particle represents probability mass flowing between states.

Attribution Results

α = 0.5

Final credit allocation with 95% confidence intervals from Bootstrap + Dirichlet UQ

Channel	Hybrid Share	Attributed Value	95% CI	Confidence
Google Search	55.8%	$73.35	$68–$78	High
Facebook	13.5%	$23.63	$20–$27	High
Email	16.2%	$33.90	$31–$38	High
Direct	4.5%	$11.63	$8–$15	High

💡 **CI = Confidence Interval.** Narrower range = more certainty. "High" confidence means the interval is <10% of the value.

Model Configuration

IR Version: 1.0.0

Markov Order: First-order

Shapley Mode: Exact enumeration

Coalitions: 2^n = 32

UQ Method: Bootstrap + Dirichlet

Psychographic: Context-weighted

Key Invariant: All channel shares sum to exactly 1.0 (Efficiency Axiom enforced)

Ethical Boundary

This is a Personal Epistemic Instrument—designed for reflection, not surveillance. It helps you understand your own behavioral patterns.

✓ **Allowed:** Aggregate behavior, transition patterns, declared context

✗ **Prohibited:** Mental state inference, predictive profiling, surveillance

"Layer 4 (Psychographic Inference) is architecturally prohibited. We analyze what you did, never what you felt."

Common Questions

Why not just use last-click attribution?

Last-click ignores all earlier touchpoints. A user might see 5 ads before converting—last-click gives 100% credit to the final one. Our hybrid model credits the entire journey fairly.

What makes this "first principles"?

Every calculation is derivable from axioms. Shapley values satisfy Efficiency, Symmetry, Dummy, and Additivity. Markov chains are provably row-stochastic. No black boxes.

What do the confidence intervals mean?

We resample your data 10,000 times (Bootstrap) and add Bayesian smoothing (Dirichlet). The 95% CI shows the range where the true value likely falls.

Can I trust these numbers for decisions?

Yes, within the model's assumptions. Check the CI width—narrow = high confidence. Compare against holdout tests. This is a scientific instrument, not an oracle.