

PATENT APPLICATION

INVENTOR(S)

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TITLE

[0002] Memory Field Pressure & Tension System

TECHNICAL FIELD

[0003] This invention relates to decentralized coordination in distributed ledger systems, and more particularly to theory-level mechanisms for leveraging historical event data to drive emergent system behaviors.

BACKGROUND

[0004] As distributed systems evolve, vast logs of historical events accumulate across public and private contexts. Traditional blockchains treat these logs as static historical artifacts. This framework instead interprets the totality of memory as an active substrate—one that generates tension, flow, and reflex pressure based on accumulation patterns. These properties enable local agents or nodes to infer system state and coordinate behavior without centralized control, algorithmic polling, or state reconciliation.

SUMMARY

[0005] The Memory Field Pressure & Tension System comprises the following conceptual steps. This system allows memory itself—not tokens, commands, or consensus—to govern response and behavior:

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1. Observation of atomic events within decentralized memory logs—whether on-chain, off-chain, or hybrid structures.
2. Attestation of these events to ensure permanence and verifiability.
3. Aggregation of event patterns into an implicit flow signal representing narrative intensity or reflex potential.
4. Emergence of pressure points from these signals, interpreted locally by autonomous systems to coordinate action.
5. Organic weaving of flow signals across streams to form pressure points that can influence autonomous behaviors.

DETAILED DESCRIPTION

[0006] In this framework, each event—when permanently recorded—nudges the memory substrate. The accumulation of records over time produces observable pressure gradients, driven by factors such as density, drift, recurrence, delay, or silence. Local processes may interpret these gradients using any model (e.g., language model, rule engine, or statistical filter) or hybrid methods combining semantic analysis, rate of change detection, and civic context weighting. No single model is required, and the system allows for reflex logic to emerge from distributed interpretation, not pre-defined functions. These local interpretations may trigger action, reflection, broadcast, or silence.

[0007] Crucially, the system does not require explicit threshold conditions, hardcoded reaction logic, global clocks or centralized scheduling, or token-based incentives. The framework supports both interpreted and compiled local models, but imposes no requirement that cognition be deterministic or repeatable across nodes.

NARRATIVE WORKED EXAMPLE

[0008] Consider three domains emitting attestable events: supply chain updates, community votes, and IoT device logs. Over several minutes, a burst of community votes correlates with alerts from IoT sensors. A local agent, watching its attested memory,

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detects this cross-domain surge and—without any global rule—flags the convergence as a pressure point. This may trigger local reconfiguration or public reflection, depending on system design.

POTENTIAL EMBODIMENTS

[0009] An embodiment where flow dynamics are computed via moving averages or statistical filters to illustrate controlled behavior.

[00010] An embodiment where natural event inter-arrival patterns alone, without explicit computation, give rise to pressure points observable by participants.

[00011] An embodiment combining cryptographic attestations with privacy-preserving proofs (e.g., ZKPs) to maintain confidentiality.

[00012] An embodiment leveraging multi-layered anchoring (e.g., narrative, reflexive, civic, or ethical memory chains) to modulate flow intensity across interpretive dimensions.

[00013] An embodiment leveraging multi-layer subchain anchoring (L1–L6) to modulate flow intensity per chain level.

ENABLING WORKED EXAMPLE

[00014] Consider three successive mint events recorded on-chain:

1. Mint A at $t=0s$: genesis event, baseline flow $F_0 = 0$.
2. Mint B at $t=10s$: recorded event yields an attestation; flow increases to $F_1 = 1$ unit.
3. Mint C at $t=15s$: attestation with recurrence near previous event; flow increases to $F_2 = 2$ units.
4. A subsequent Mint D at $t=25s$, occurring after a pause, yields $F_3 = 1.5$ units (due to divergence weighting).
5. Plotting F over time: $0 \rightarrow 1 \rightarrow 2 \rightarrow 1.5$, observers identify a peak at F_2 . This peak organically defines a pressure point at $t=15s$, without prescribing a threshold.

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6. Participants can interpret such a pressure point as signaling a coordinated action (e.g., on-chain governance review).

ALGORITHMIC WORKED EXAMPLE

[00015] In an alternative embodiment, pressure values are calculated via explicit formulas. For example, let $P = w_f \cdot f + w_r / \Delta t + w_d \cdot D$, where $w_f=1.0$, $w_r=0.5$, $w_d=0.2$.

[00016] Consider two events: Event1 at $t=0s$ with $f=1$, Δt not defined for initial baseline, so $P_0=1.0$; Event2 at $t=5s$ with $f=1$, $\Delta t=5s$, $D=0$ yields $P_1 = 1.0 + 0.5/5 + 0 = 1.1$.

[00017] Using an exponential moving average for benchmark B with $\alpha=0.3$: $B_1 = (1 - 0.3) \cdot P_0 + 0.3 \cdot P_1 = 0.7 \cdot 1.0 + 0.3 \cdot 1.1 = 1.03$. Since $P_1 (1.1) > B_1 (1.03)$, a pressure point is recorded at $t=5s$.

[00018] This example demonstrates a coded embodiment where explicit computation yields the same emergent pressure dynamics.

CLAIMS

1. A method for generating emergent pressure dynamics from a decentralized memory field, the method comprising:
 - a. monitoring, by a processor, a plurality of on-chain events across at least one base chain and one memory-anchored subchain;
 - b. cryptographically attesting, by the processor, each monitored event;
 - c. aggregating, by the processor, the attestations into a continuous flow signal representing network-wide memory activity; and
 - d. organically weaving, by the processor, the flow signal across multiple streams to generate pressure points that influence decentralized behaviors.
2. The method of claim 1, wherein the flow signal arises without reliance on external control flows or hard-coded algorithmic loops.

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3. The method of claim 1, wherein participants interpret pressure points to coordinate autonomous or consensus-driven responses.
4. The method of claim 1, wherein attestations are incorporated via attested write operations that produce immutable memory entries, including but not limited to on-chain mint transactions following a one-action-one-mint paradigm.
5. The method of claim 1, wherein the pressure points are interpreted locally by one or more computational models selected from the group consisting of:
 - a. language models,
 - b. statistical inference engines,
 - c. rule-based decision systems, and
 - d. hybrid models combining civic or ethical corpora.
6. The method of claim 1, wherein absence of events, delay in expected events, or deviations from historical rhythm generate measurable tension in the memory field.
7. The method of claim 1, wherein each observed event is processed statelessly and interpreted in context without maintaining persistent internal state.
8. The method of claim 1, wherein memory streams include both publicly visible events and private attested events, and wherein flow is computed without requiring exposure of private data.
9. The method of claim 1, wherein pressure points may trigger automatic, semi-automatic, or advisory outputs, selected from the group consisting of:
 - a. local actuation,
 - b. system narrative generation,
 - c. human-facing suggestions,
 - d. agent spawning or resource allocation.
10. The method of claim 1, wherein the interpretation of pressure points may yield divergent outputs across systems based on local memory, context models, or ethical constraint variation.

ABSTRACT

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[00019] A foundational framework treating a decentralized memory field as a living substrate, wherein each atomic on-chain event contributes to emergent pressure and flow dynamics without reliance on centralized commands, external triggers, or fixed thresholds.