TemporalLock

Neutral Temporal Receipts for Evidence Without Narrative or Authority

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Abstract

TemporalLock is an open-source, append-only system for recording observations at specific moments in time — with evidence and confidence — without imposing narrative, authority, or interpretive claims. It preserves sequence and provenance through cryptographic linking while remaining fork-permissive, auditable, and neutral by design. This paper presents the philosophical foundations, technical architecture, and integrated design principles of TemporalLock. It argues that systems for recording events should prioritize verifiable observation over authoritative interpretation, and demonstrates how TemporalLock operationalizes this principle through minimal structure, cryptographic integrity, and explicit refusal of narrative control.

1. Philosophical Foundations

1.1 The Problem of Narrative Capture

Most systems that record events eventually become systems that interpret events. Over time, the infrastructure of recording accumulates authority — not through explicit claim, but through default control over what counts as a valid record, what evidence is considered sufficient, and what narratives are permitted to form around the data. TemporalLock begins from the opposite premise: a system for recording time-bound observations should minimize its own interpretive power. It should preserve evidence of what was observed and when, while refusing to assert importance, causality, or meaning.

1.2 Receipts, Not Truth Claims

The core unit in TemporalLock is the receipt — a timestamped observation accompanied by evidence and a confidence score. A receipt does not claim that something is true, important, or authoritative. It only claims that at a particular moment, an observation was made and evidence was attached. This distinction is deliberate. By refusing to participate in narrative construction, TemporalLock reduces the incentive for capture, coercion, or selective presentation. The record exists independently of any single interpreter.

1.3 Fork-Permissive Integrity

Traditional systems often rely on centralized validation or authoritative consensus. TemporalLock instead relies on cryptographic linking and append-only structure. Because the system is fork-permissive, multiple independent implementations and interpretations can coexist without requiring permission or reconciliation. Integrity is maintained through verifiable chains rather than institutional authority.

2. Technical Architecture

2.1 Core Data Model

Each receipt contains at minimum: - Timestamp of observation - Brief summary of what was observed - Supporting evidence (or reference to evidence) - Confidence score assigned by the observer - Cryptographic hash linking to the previous receipt The schema is intentionally minimal. Additional fields may be added by implementations, but the core structure remains stable to support long-term verifiability.

2.2 Cryptographic Linking

Receipts are linked through successive cryptographic hashes. Each new receipt incorporates the hash of the previous receipt, forming an immutable chain. This provides: - Provenance verification (any break in the chain is immediately detectable) - Sequence integrity (the order of observations cannot be altered without detection) - Fork detection (divergent chains become visible through hash mismatches)

2.3 Append-Only Constraint

Once written, receipts cannot be modified or deleted. This constraint is architectural rather than merely procedural. It eliminates the possibility of retroactive narrative adjustment and ensures that all observations — including corrections and disputes — exist as new receipts rather than alterations of prior ones.

2.4 Verification and Auditability

Any party can independently verify the integrity of a TemporalLock chain using only the published schema and hash verification tools. No special access or permission is required. This supports both individual verification and large-scale, decentralized auditing.

3. Integration of Philosophy and Design

TemporalLock demonstrates a direct correspondence between its philosophical commitments and its technical choices: - The refusal of narrative authority is implemented through minimal schema and explicit non-interpretive design. - The commitment to evidence is enforced by requiring supporting material with every receipt. - The rejection of centralized control is realized through fork-permissive architecture and cryptographic rather than institutional integrity. - The emphasis on long-term verifiability is supported by stable schemas, append-only constraints, and transparent verification methods. In this way, TemporalLock does not merely describe a set of values — it encodes them into the structure of the system itself. The design makes certain forms of capture, revisionism, and authority structurally difficult or impossible.

4. Conclusion

TemporalLock offers a minimal, verifiable, and philosophically consistent approach to recording observations over time. By prioritizing evidence over interpretation and cryptographic integrity over institutional authority, it provides infrastructure for contexts where narrative control itself is a risk. Future development will focus on tooling, integration patterns, and exploration of applications in high-stakes documentation, dispute resolution, and long-term archival contexts where neutrality and auditability are paramount.

Signed
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