PATENT APPLICATION

INVENTOR(S)

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TITLE

[0002] Memory-Driven Autonomy for Physical Agents

TECHNICAL FIELD

[0003] The invention relates to autonomous systems, robotics, and decentralized memory networks. More specifically, it concerns methods for physical agents to operate based on anchored memory and civic pressure, applicable to vehicles, drones, and service robots.

BACKGROUND

[0004] Current self-driving and autonomous systems rely on sensor data, probabilistic inference, and static rules. These approaches struggle with unpredictability, lack true memory, and are unable to learn from cumulative experience. There is a need for a system where decisions are rooted in anchored memory, reflex logic, and tension-based activation.

SUMMARY

[0005] This invention introduces a system of multi-layered memory anchoring for autonomous physical agents, enabling decisions based on previously anchored events and civic pressure. Actions are determined by the presence of systemic tension across memory layers, allowing agents to execute reflexive responses rooted in long-term system knowledge.

DETAILED DESCRIPTION

[0006] Agents anchor all real-world actions and reflections to a decentralized memory system. These memory records form the basis for triggering pressure across the system. When an agent identifies tension aligned with its domain, it executes reflexive behavior based on the cumulative tension pattern, contributing to shared memory resolution and long-term behavioral adaptation across the mesh. The approach allows for long-term adaptation and coordination of autonomous agents in civic settings.

METHOD FLOW

1. Sensor Observation – The agent observes its environment through sensors (e.g., camera, lidar, telemetry).
2. Memory Anchoring – The agent logs observations as immutable entries in a multi-layer decentralized memory system (e.g., hesitation, conflict, anomaly).
3. Tension Accumulation – The memory system identifies patterns of unresolved or repeated conditions, surfacing areas of accumulated pressure or civic tension.
4. Reflex Matching – When tension is detected, the agent evaluates relevant memory layers for prior instances and selects a reflexive behavior matched to the situation.
5. Civic Action Execution – The agent executes an action based on memory-informed reflex logic, contributing a new record to the shared memory substrate.

NARRATIVE WORKED EXAMPLE

[0007] An autonomous delivery robot detects a repeated conflict at a narrow alley entrance. Over several days, different agents have minted delays and hesitation in the same spot. When the current agent approaches the location, it checks L5 for previously recorded conflicts. Upon confirming tension, it reroutes through an alternate path.

Because the decision resolved an active pressure zone, future agents approaching the same location can act reflexively, avoiding delay and compounding risk.

ALGORITHMIC WORKED EXAMPLE

[0008] Pseudocode:

```
observe()
  anchor(mint:pause:location=22nd_Market)
  scan(L5, L6) for similar events
if tension_detected:
 execute(reflex:reroute)
 anchor(mint:reroute:reason=memory_conflict)
```

POTENTIAL EMBODIMENTS

[0009] Urban logistics bots with memory-driven intersection behavior.
[00010] Drone navigation systems that adjust flight paths based on anchored environmental tensions.
[00011] Service robots that learn avoidance behavior from cumulative field memory.
[00012] Agricultural or manufacturing robots that adjust scheduling or methods based on prior failures or drift.

IMPLEMENTATION NOTES

[00013] Memory anchoring may be executed on-chain using any one-action-one-mint format. Pressure analysis and reflex logic may occur on-device or in a decentralized relay. Reflexes can be triggered using L4-surfaced tension thresholds or direct queries to

civic mesh memory. Reflex actions are logged via standard one-action-one-mint entries and interpreted downstream by future agents or cognition layers.

CLAIMS

1. A method for autonomous control of physical agents based on anchored memory and pressure-surfaced reflex logic.
2. A system wherein agents log environmental interaction as immutable civic memory records.
3. A method for detecting tension across shared memory and executing reflex actions informed by past experience.
4. A cognitive mesh structure integrating multiple layers to coordinate reflex logic and shared memory interpretation for autonomous physical agents.

ABSTRACT

[00014] A method for autonomous physical agents to operate via memory anchoring, tension detection, and reflexive action. This invention enables self-guided vehicles, drones, and robotics systems to act based on long-term shared memory and emergent pressure patterns, rather than probabilistic inference or rigid rules. Agents contribute to a growing civic memory mesh that enables safer, more context-aware autonomous behavior.