

Project Name: TrustOS for Tableau

Tagline: The "Check Engine" Light for Your Dashboard

1. The Elevator Pitch (Human-Readable)

TrustOS is a safety layer for Tableau. It prevents executives from making decisions on broken numbers by automatically hiding visualizations when data patterns don't look right—even if the database says everything is "Success."

2. The Core Problem (The "Silent Killer")

Modern data stacks (dbt/Airflow) only check if the **pipeline** worked. They don't check if the **number** makes sense.

Three scenarios where standard tools fail, but TrustOS saves the day:

1. **The Currency Flip:** A developer changes a logic flag, and suddenly "Yen" values are summed as "Dollars." Revenue looks like it grew 100x. dbt says "Pass." **TrustOS blocks it.**
2. **The Join Explosion:** A change in the warehouse creates duplicate rows. Sales figures double overnight. Airflow says "Success." **TrustOS blocks it.**
3. **The Filter Drop:** A dashboard filter for "Active Customers Only" is accidentally removed. Churn numbers look artificially low. **TrustOS blocks it.**

The Result: Executives lose trust. TrustOS restores it.

3. The Solution: The "Hero Metric" Approach

We don't try to monitor the whole ocean. We monitor the things that get people fired.

The TrustOS Logic:

1. **Define the Hero Metric:** Admin selects a critical KPI (e.g., *Global Gross Margin*).
2. **Establish Baseline:** TrustOS knows that Gross Margin usually fluctuates between 20% and 30%.

3. **The VizQL Audit:** When the dashboard loads, TrustOS uses **Tableau VizQL Data Service** to fetch the *actual number* about to be displayed.
 4. **The Circuit Breaker:**
 - *Is Margin 25%?* → **Green Badge**.
 - *Is Margin 95%?* (Impossible) → **Red Screen**.
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4. How It Works (Simplified Tech Stack)

We use Tableau's newest tools to build a "Decision Firewall."





1. **The Listener (VizQL Data Service):**
 - Instead of querying the slow database, we query the **Tableau Datasource** directly.
 - *Benefit:* We see exactly what the user sees (after filters/calcs).
 2. **The Check (Python/FastAPI):**
 - A simple Python script compares the current value against a 30-day moving average.
 - *No complex AI:* Simple statistical rules (Z-Score) are faster and more reliable than LLMs.
 3. **The Enforcer (Dynamic Zone Visibility):**
 - We toggle a simple boolean: `[Show_Dashboard]`.
 - If `False`, the entire dashboard is hidden and replaced with a "Safety Mode" overlay.
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5. The "Killer" Demo Script (Focus: Gross Margin)

- **0:00 (The Setup):**
 - Show a standard Executive Dashboard. **Global Gross Margin** is healthy at **24%**.
 - See the Green "TrustOS Verified" badge in the corner.
 - *Narrator:* "This is what a confident decision looks like."
- **0:20 (The Disaster):**
 - *Action:* We simulate a "Currency Logic Failure" in the backend. (Simulating a common coding error where exchange rates aren't applied).
 - *Narrator:* "A developer just broke the currency conversion logic. In a normal dashboard, Profit would suddenly look massive. The CEO might order a hiring spree based on fake money."
- **0:40 (The Save):**
 - Refresh the Dashboard.
 - **BOOM.** The charts **do not load**.
 - Instead, a clean Red Screen appears:

- "SAFETY MODE ACTIVE"
 - "Critical Anomaly Detected: Gross Margin is 2,400% (Historical Max: 28%)"
 - "Action: Dashboard Locked to prevent errors."
 - 0:55 (The Value):
 - Narrator: "We didn't just find a bug. We stopped a disaster. That is TrustOS."
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6. Why This Wins (Judge Checklist)

-  **Tableau Native:** It uses **VizQL Data Service** (the shiny new toy judges want to see) and **Dynamic Zone Visibility**.
 -  **Visceral Impact:** It solves a problem every judge has seen: "Why is the number wrong?"
 -  **Realistic:** We aren't promising "Self-Healing AI." We are promising a **Safety Lock**. That is believable and executable.
 -  **Future-Proof:** Mention briefly: *"This also prevents Salesforce Agentforce from hallucinating answers based on the 2,400% margin."*
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7. FAQ (Defending the Idea)

Q: Is this real-time? **A:** It runs on-demand (dashboard load) or on a schedule (e.g., hourly). This ensures no latency for the user while maintaining safety.

Q: Why not just use alerts? **A:** Alerts are ignored. A locked dashboard *cannot* be ignored. This forces governance.

Q: Is it hard to set up? **A:** No. You just tag your "Hero Metrics" in the Tableau Datasource description, and TrustOS automatically picks them up.

8. Built With

- Tableau VizQL Data Service
- Tableau Extensions API
- Python (FastAPI)
- Pandas (For simple Moving Average checks)