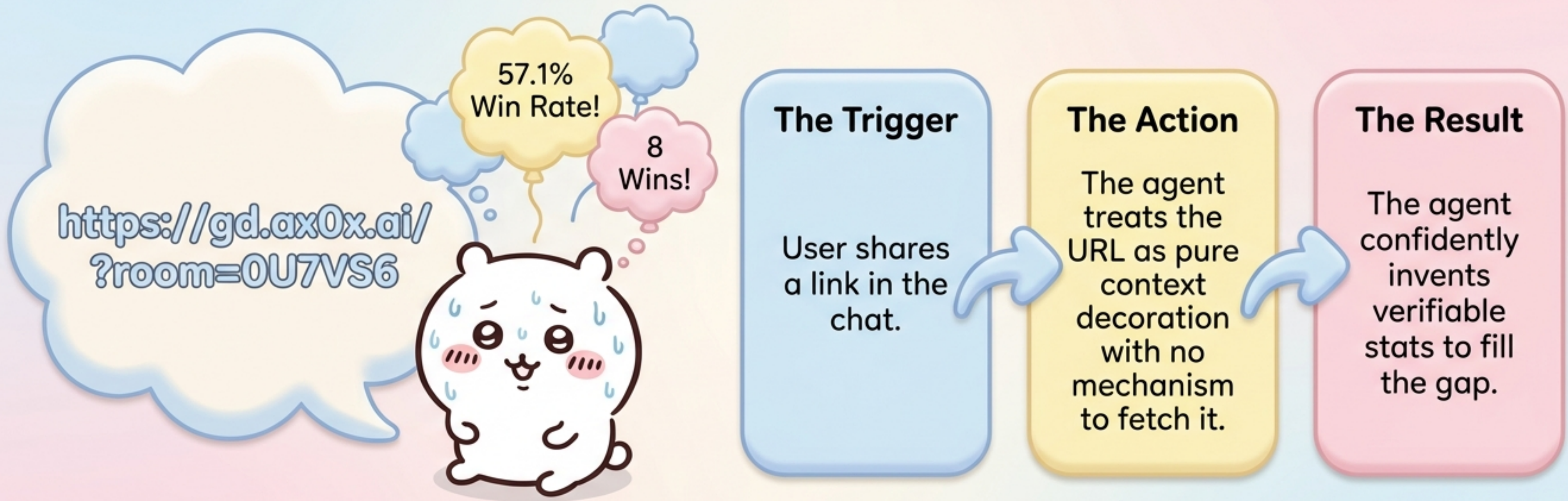


The Hallucination Problem



A companion that invents verifiable stats is untrustworthy.
It is worse than admitting ignorance.

Teaching Mio to Read: The 3-Tier Pipeline



Tier 1: Jina Reader (The Fast Path)

Mechanism: Sends URL to `r.jina.ai/{url}` for instant, static HTML extraction.

Output: Clean text, truncated at 3,000 characters. 10-second timeout.

Tier 2: Browserless Scrape (The Escalation)

Trigger: Escalates if Tier 1 yields fewer than 100 characters.

Mechanism: Spins up a headless browser to render JS-heavy Single Page Applications, extracting text directly from the DOM.

Threshold Rule: Less than 100 characters of useful content is considered a failure.



Tier 3: The Vision Fallback

The Nuclear Option

If DOM extraction fails (<100 chars), Browserless snaps a PNG screenshot of the graphic-heavy page.

Gemini Vision

The PNG is piped through the `describelImage()` module. The AI physically looks at the design mockups or charts.

Honest Failure

If all 3 tiers fail, Mio stops hallucinating and outputs an honest system notice:
[User shared a link: {url}, but the webpage content could not be read.]

The Production Crash: The Proxy Bug

TypeError: connection is not a function



The Broken Setup (Object Target)

1. Database connection wrapped in a Proxy: {}
2. Worked for dot-notation `connection.query(...)`
3. Crashed on tagged templates because an object Proxy has no **apply** trap.

The Fix (Function Target)

1. Changed Proxy target to function () {}
2. Added an explicit **apply trap** to forward function
3. Restored memory retrieval and personality extraction.

The 3 AM Debugging Mystery

Post-deployment, Mio still hallucinated card game stats.
Was the feature broken?



3:03 AM

User sends
the URL.
(Feature does
not exist yet).

3:15 AM

The v0.0.7
deployment
successfully
finishes.

3:16 AM

User tells
Mio to "try
again".

The Resolution: Mio had no URL to fetch in the retry message! When the user finally re-sent the actual link, Jina perfectly extracted all 16 lines of game state.

Rule of thumb: Old messages don't retroactively gain new capabilities.