

# BUILDING GUARDRAILS THAT DON'T KILL LATENCY

## Performance + Safety in Production Agents

⚠ "Our guardrails add 2.5 seconds to every request"

# THE PROBLEM

WITH SYNC GUARDRAILS

**2.5s**

Per Request

WITH ASYNC GUARDRAILS

**800ms**

Per Request

Request



PII Check  
(400ms)



Policy  
(300ms)



Agent  
(800ms)

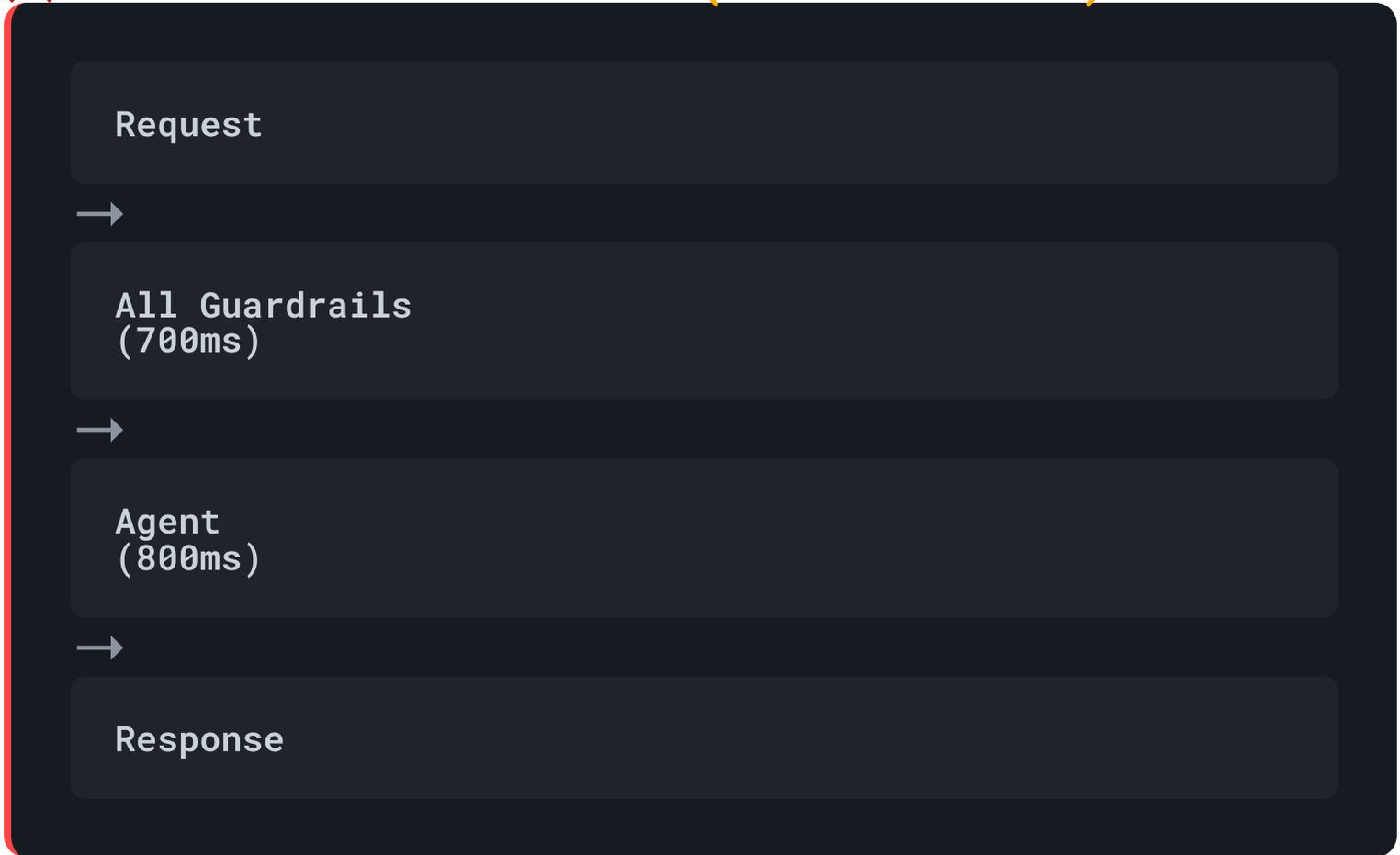


## Response

Total Latency: 2.5 seconds (Users expect <1 second)

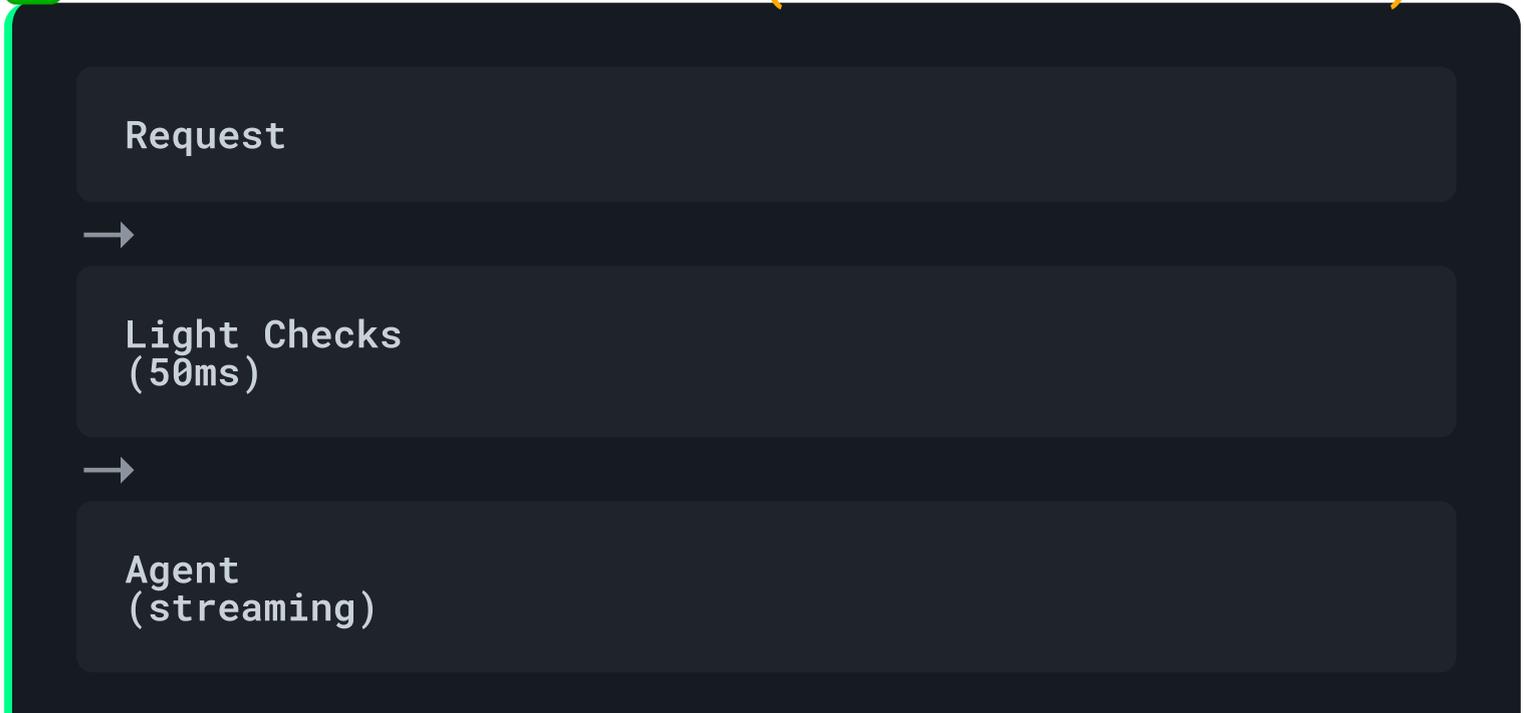
# WRONG VS RIGHT APPROACH

## ✗ WHAT MOST TEAMS DO (SYNCHRONOUS)



Total: 1.5s + waiting time = Poor UX

## ✓ WHAT YOU SHOULD DO (ASYNC + STREAMING)





Response  
+ Async Checks

User sees response in 850ms. Guardrails run in parallel.

# WHERE GUARDRAILS BELONG

## PRE-AGENT

*(Synchronous)*

- Input validation
- Rate limiting
- Cost checks
- Obvious violations

## POST-AGENT

*(Asynchronous)*

- PII detection
- Content filtering
- Compliance checks
- Logging & audit

## HUMAN-IN-LOOP

*(Triggered)*

- High-risk actions
- Edge cases
- Escalations
- Audit flags

# PII DETECTION STRATEGY

## Sync: Quick Pattern Matching (50ms)

WHAT TO CHECK

**Obvious patterns (SSN, CC)**

WHEN TO BLOCK

**High-confidence matches**

## Async: Deep Analysis (200ms)

WHAT TO CHECK

**Names, emails, addresses**

WHEN TO INTERVENE

**Flag for review/redact**

## Streaming: Real-time Intervention

HOW IT WORKS

**Check tokens as they stream**

ACTION

**Stop stream if PII detected**

# POLICY ENFORCEMENT PATTERNS

## Pre-Flight Checks (Sync)

COST/RATE LIMITS

**Block before processing**

BANNED CONTENT

**Keyword blocklists**

## Output Analysis (Async)

CONTENT SAFETY

**Toxicity, bias detection**

COMPLIANCE

**Industry regulations**

## Circuit Breakers (Triggered)

ANOMALY DETECTION

**Unusual patterns**

AUTO-ESCALATE

**Human review**

# THE RESULTS

## BEFORE (SYNC)

Average Latency

**2.5s**

P95 Latency

**4.2s**

User Satisfaction

**64%**

## AFTER (ASYNC)

Average Latency

**850ms**

P95 Latency

**1.2s**

User Satisfaction

**91%**

Separate what **MUST** be  
sync  
from what **CAN** be async.



**Guardrails Patterns**  
community.nachiketh.in



**Production Systems Bootcamp**  
bootcamp.nachiketh.in

Speaker notes