



CHAIN REACTION

An error is not an event it's a Chain Reaction!

Team Members

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ChAIIn Reaction

Problem

Manual impact analysis of code changes is slow, deeply dependent on experts, and highly error-prone. Developers spend hours inspecting diffs, tracing dependency chains, and trying to understand how changes propagate across large multi-repo systems.

Solution

ChAIIn-Reaction – A platform that builds a **unified enterprise graph** spanning microservices, data stores & middleware. The UI visualizes this structure for exploration, impact propagation, and even manual addition of edges where tribal knowledge exists. On a pull request, it computes the impact from the graph and uses AI to explain it clearly. **ChAIIn-Reaction combines AST parsing, graph theory, and LLM interpretation to provide an end-to-end view of how changes ripple across a system's entire software landscape.**

Customers

- Developers, tech leads, architects, and enterprise software teams
- QA engineers, release managers, and DevOps teams

Unique Value Proposition

- Extensible plug-in architecture lets new languages and system types be added without touching the core
- Shows how any change ripples across services, databases, queues, and shared libraries in seconds.
- Helps architects spot fragile clusters & high-dependency services that drive systemic risk.
- AI turns complex graph insights into clear, actionable explanations for teams.
- Effective time to production with minimal learning curve.

Key Metrics

- Impact Coverage
- Time to production
- Graph Completeness
- Risk Hotspots Identified
- AI Explanation Accuracy

Channels

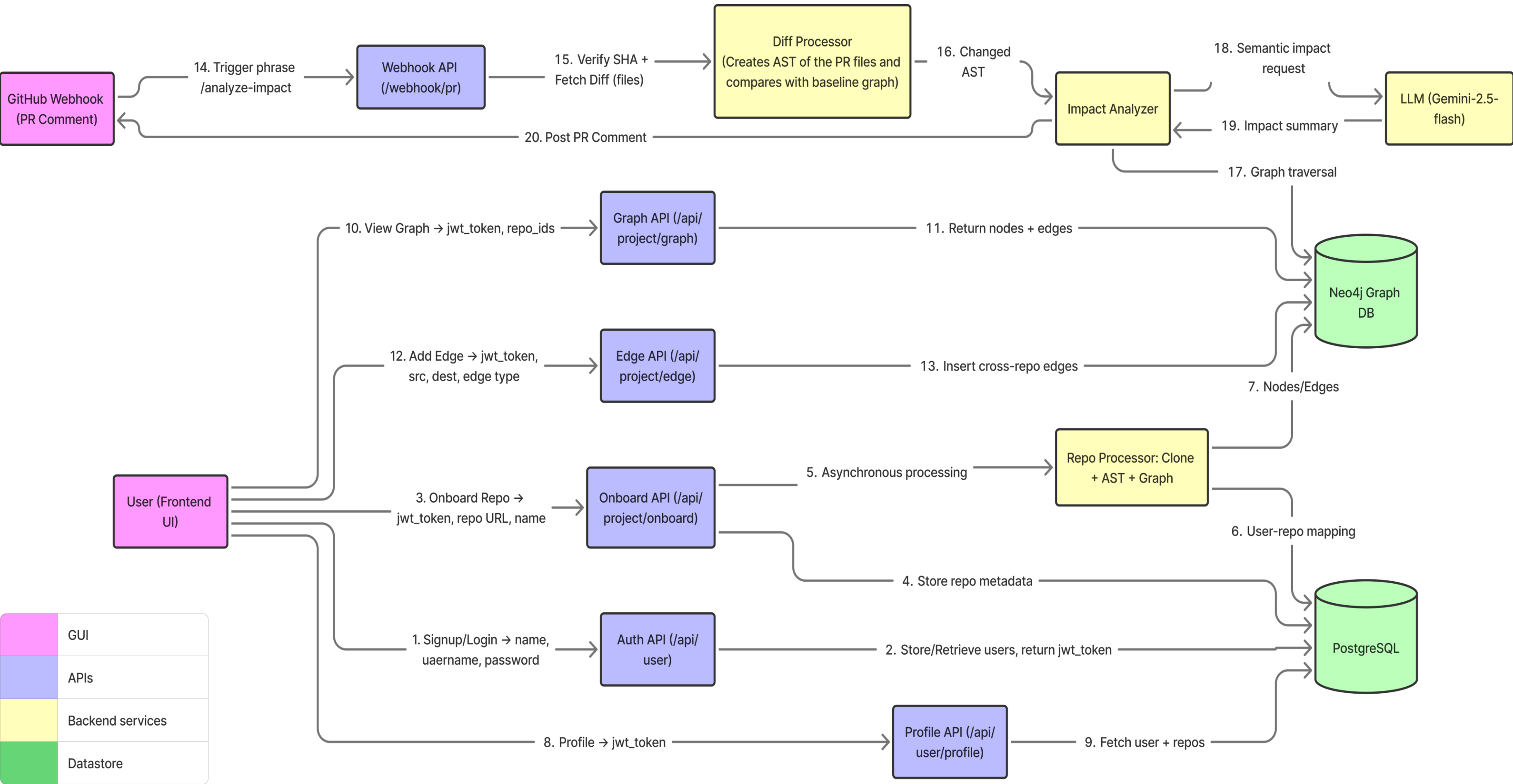
- Model integrated directly into the GitHub Pull Request workflow, where developers already review and approve changes.
- Supported by a lightweight web dashboard to explore dependency graphs, impact summaries, and cross-repo relationships in more detail.

GUI

APIs

Backend services

Datastore



PrernaSharma23 commented yesterday

Owner

@ChAIIn-Reaction-Bot analyze impact

ChAIIn-Reaction-Bot commented yesterday

Collaborator

ChAIIn Reaction In Progress

Thanks for triggering impact analysis! I'm now analyzing the dependencies and changes in this pull request.

What I'm doing

Comparing your changes against the dependency graph

Tracing impact propagation across repositories

Expected completion

You'll receive an impact report shortly.

Stand by... 🚀

ChAIIn-Reaction-Bot commented 2 hours ago

Collaborator

High-Level Summary Table

Area	Why Impacted	Type of Change	Risk Level
External Integration	Changes in PR's repo affect external repo components	Code Change	Medium

Code Level Impact

Kind	Name	Repo	Path	Impact Reason
method	server_get	demo-gateway	src\repository\server_client.py	External dependency affected
file	src\repository\server_client.py	demo-gateway	src\repository\server_client.py	External dependency affected

Fig 1. Pull request impact analysis by chain reaction

Outcomes

Comment '*Analyze Impact!*' on the pull request of your version control platform to get a clear impact analysis explained by an AI helper. Find out cross repo or complete impact by one comment!

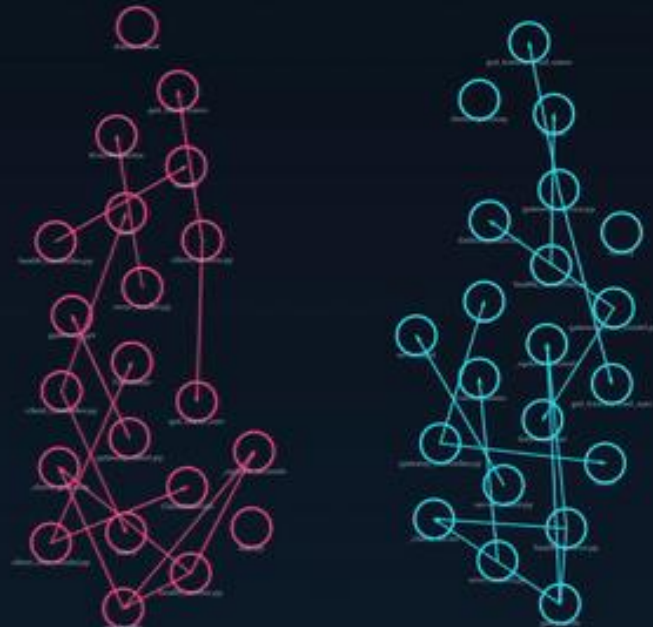
Visualize Chain Reaction upon modification of any node and identify risk hotspots and inter-dependent clusters!

Dependency Graph

Interactive dependency visualization

demo-gateway

demo-client



Repo Details

Inspect dependencies

Primary Repo

demo-client

View Type

Intra Repo

Inter Repo

Second Repo

demo-gateway

Choose Second Repo

Add Dependency

Drag Mode

Manual Mode

Fig 2. Chain Reaction UI for onboarding repo and dependency analysis



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Thank You!