

## RIFT 2026 HACKATHON

AI/ML • DevOps Automation • Agentic Systems Track

# BUILD AN AUTONOMOUS CI/CD HEALING AGENT

## Autonomous DevOps Agent with React Dashboard

Multi-city Hackathon • AIML Track

### BACKGROUND CONTEXT

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Modern software development relies heavily on CI/CD pipelines. However, these pipelines frequently fail due to various issues including code quality issues, logic bugs, syntax errors, type errors, and integration issues between multiple files.

Developers spend 40–60% of their time debugging these failures instead of building new features. This challenge tasks you to build an agent that can autonomously detect, fix, and verify code issues.

### CORE CHALLENGE

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Build an Autonomous DevOps Agent with a React Dashboard that:

- Takes a GitHub repository URL as input via the web interface
- Clones and analyzes the repository structure
- Discovers and runs all test files automatically
- Identifies all failures and generates targeted fixes
- Commits fixes with [AI-AGENT] prefix and pushes to a new branch
- Monitors CI/CD pipeline and iterates until all tests pass
- Displays comprehensive results in a React dashboard

### REACT DASHBOARD REQUIREMENTS

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⚠ The React dashboard is the primary interface judges will use to evaluate your agent. It **MUST** be production-ready and publicly deployed.

#### 1. Input Section

- Text input for GitHub repository URL
- Text input for Team Name (e.g., "RIFT ORGANISERS")
- Text input for Team Leader Name (e.g., "Saiyam Kumar")
- "Run Agent" or "Analyze Repository" button
- Loading indicator while agent is running

## 2. Run Summary Card

- Repository URL that was analyzed
- Team name and team leader name
- Branch name created (TEAM\_NAME\_LEADER\_AI\_Fix)
- Total failures detected and total fixes applied
- Final CI/CD status badge: PASSED (green) / FAILED (red)
- Total time taken (start to finish)

## 3. Score Breakdown Panel

- Base score: 100 points
- Speed bonus applied (+10 if < 5 minutes)
- Efficiency penalty (-2 per commit over 20)
- Final total score displayed prominently
- Visual chart/progress bar showing score breakdown

## 4. Fixes Applied Table

Table with columns:

- File | Bug Type | Line Number | Commit Message | Status
- Bug types: LINTING, SYNTAX, LOGIC, TYPE\_ERROR, IMPORT, INDENTATION
- Status: ✓ Fixed or ✗ Failed
- Color coding: Green for success, red for failure

## 5. CI/CD Status Timeline

- Timeline visualization showing each CI/CD run
- Pass/fail badge for each iteration
- Number of iterations used out of retry limit (e.g., "3/5")
- Timestamp for each run

## BRANCH NAMING REQUIREMENTS

**⚠ CRITICAL: Your agent MUST create branches with this EXACT format:  
TEAM\_NAME\_LEADER\_NAME\_AI\_Fix**

**Naming Rules:**

- All UPPERCASE
- Replace spaces with underscores ( \_ )
- End with \_AI\_Fix (no brackets)
- No special characters except underscores

| Team Name       | Leader Name  | Branch                              |
|-----------------|--------------|-------------------------------------|
| RIFT ORGANISERS | Saiyam Kumar | RIFT_ORGANISERS_SAIYAM_KUMAR_AI_Fix |
| Code Warriors   | John Doe     | CODE_WARRIORS_JOHN_DOE_AI_Fix       |

**TEST CASE MATCHING — EXACT FORMAT REQUIRED**

⚠ **CRITICAL: Your agent's output MUST match our test cases line-by-line.**

Judges will evaluate based on exact matches:

| Test Case                                  | Expected Dashboard Output  |
|--|--|
| src/utils.py — Line 15: Unused import 'os' | LINTING error in src/utils.py line 15 → Fix: remove the import statement             |
| src/validator.py — Line 8: Missing colon   | SYNTAX error in src/validator.py line 8 → Fix: add the colon at the correct position |

**TECHNICAL REQUIREMENTS**

**Frontend**

- Must be built with React (functional components + hooks)
- Must be responsive (desktop + mobile)
- Must be deployed and publicly accessible
- Frontend code must be in /frontend folder in repository
- Must use proper state management (Context API, Redux, Zustand, etc.)

**Backend / Agent**

- Must generate results.json file at end of each run
- Must include API endpoint that triggers agent (REST or GraphQL)
- Must use multi-agent architecture (LangGraph, CrewAI, AutoGen, etc.)
- Code execution must be sandboxed (Docker recommended)
- Must have configurable retry limit (default: 5)

## MANDATORY SUBMISSION REQUIREMENTS

⚠ **ALL of the following are MANDATORY. Missing any component will result in DISQUALIFICATION.**

| # | Requirement                  | Details  |
|---|------------------------------|--|
| 1 | Live Deployed Website URL    | React dashboard must be publicly accessible. Must accept GitHub repo URL as input. Platforms: Vercel, Netlify, Railway, AWS, or any hosting service.   |
| 2 | LinkedIn Video Demonstration | 2–3 min max. Must tag @RIFT2026 on LinkedIn. Must show: live demo, architecture diagram, agent workflow walkthrough, results dashboard. Post must be public.   |
| 3 | GitHub Repository + README   | Public repo. README must include: project title, deployment URL, LinkedIn video URL, architecture diagram, installation instructions, environment setup, usage examples, supported bug types, tech stack, known limitations, team members. |

## SUBMISSION FIELDS

- Problem Statement selected (on RIFT website — 19th Feb, 6–8 PM window)
- GitHub Repository URL
- Hosted / Live Application URL
- Demo video link posted on LinkedIn tagging RIFT's official page

## EVALUATION CRITERIA

| Criterion          | Points | Description   |
|--------------------|--------|---|
| Test Case Accuracy | 40     | Exact match with test cases: correct bug types, line numbers, fixes applied             |
| Dashboard Quality  | 25     | All required sections, clear visualization, responsive design, live deployment          |
| Agent Architecture | 20     | Multi-agent structure, proper tool integration, sandboxed execution, iteration handling |
| Documentation      | 10     | Complete README, architecture diagram clarity, setup instructions accuracy              |
| Video Presentation | 5      | Clear explanation of architecture, live demo quality, professional presentation         |

## DISQUALIFICATION CRITERIA

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⚠ Immediate disqualification for any of the following:

- No live deployment URL
- No LinkedIn video posted
- Incomplete README
- Output does not match test cases
- Human intervention during agent execution
- Hardcoded test file paths
- Commits without [AI-AGENT] prefix
- Incorrect branch name format
- Pushing directly to main branch
- Plagiarized code from other teams

**Good luck! We're excited to see what you build.**

— RIFT 2026 Organizing Team