GitForgeResearch

Overview

System Status

Repositories

Issues

Research Environment

Research Edition v1.0

Resilient Code Hosting for Distributed Research

A specialized GitForge platform designed to test fault tolerance, measure recovery time objectives, and visualize distributed system behavior under chaos.

View Repositories

Check System Status →

Research Capabilities

Built to withstand and measure system failures in real-time.

High Availability

Configurable replication factors across Kubernetes StatefulSets to ensure zero-downtime operations.

Fault Tolerance

Built with Magic Patterns

Automatic failover and leader election mechanisms powered by Raft consensus algorithm.

Chaos Engineering

Integrated with Chaos Mesh to simulate network partitions, pod failures, and latency spikes.

Powered by Modern Infrastructure

The platform runs on a microservices architecture orchestrated by Kubernetes, using CockroachDB for distributed metadata and Gitea for repository management.

Kubernetes	CockroachDB
Gitea	Chaos Mesh

```
              k8s-cluster-status
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$ kubectl get pods -n research
NAME READY STATUS RESTARTS AGE
gitea-0 1/1 Running 0 2d
gitea-1 1/1 Running 0 2d
gitea-2 1/1 Running 0 2d
cockroachdb-0 1/1 Running 0 5d
```

Built with Magic Patterns