



PULSEVIEW

From Idea to Product in 24 Hours

Global Activity Monitor

March 1–2, 2026

Brad Butner

The Vision

What if you could see what's happening around the world — in real time?

Not a feed. Not a newsletter. A live, interactive map that shows where major events are unfolding geographically — from AI breakthroughs and economic shifts to geopolitical conflicts and public health crises. A real-time command center for global awareness.

The idea started simple: build a global AI activity monitor. But it quickly grew into something bigger — a multi-topic news intelligence platform spanning AI, economics, security, politics, and public health. Emerging hubs light up based on activity density. Diamond markers dot the map, each representing a real event — color-coded by topic, with full article details just a click away.

The harder question wasn't what to build — it was whether it could be built in 24 hours.

The answer turned out to be yes. With two AI agents working in concert — one as the architect and designer, the other as the tireless implementer — and one human steering the ship, PulseView went from napkin sketch to globally deployed production application in a single day.

This is the story of that sprint.

The Tools

A 24-hour sprint with an AI-powered toolchain

■ Perplexity Computer

The AI assistant that served as architect, researcher, designer, and first coder. It designed the full-stack architecture, generated logos, researched domain names, wrote the Convex backend, Cloudflare Worker frontend, and the entire interactive map UI — all through natural conversation.

Architect

Researcher

Designer

Frontend Dev

Backend Dev

■ OpenAI Codex

The AI coding agent that took the initial codebase and ran with it. After Perplexity Computer committed the foundation, Codex handled rapid iteration — refactoring, adding features, fixing bugs, and scaling the system from prototype to production. 16 commits over 18 hours.

Refactoring

Feature Dev

Bug Fixing

Production Scaling

CI/CD

■ Key Technologies

- **Convex** — Real-time database + cron jobs + serverless functions
- **Cloudflare Workers** — Edge hosting with caching and API protection
- **Perplexity Sonar API** — AI-powered news intelligence for hourly content
- **D3.js + TopoJSON** — Interactive map visualization with diamond markers

Phase 1: Perplexity Computer

Hours 0–6 · Architecture, Design & Foundation

Hour 0–1 ○ Concept & Naming

- Brainstormed the concept of a global activity monitor (starting with AI news)
- Researched 60+ domain names across .ai, .com, .co, .io, .dev TLDs
- Used GoDaddy API + Namecheap browser research for availability/pricing
- Rejected .ai (\$70/yr too expensive), .co (user preference), redundant names
- User purchased: pulseview.dev (~\$15/yr)

Hour 1–2 ○ Brand Identity

- Generated 3 logo iterations: v1 (eye+pulse), v2 (radar/circuit), v3 (circle+waveform ✓)
- Established color palette: steel blue (#2d5f8a) + gold (#d4a030)
- Typography: JetBrains Mono (headers/data) + Inter (body)
- Created favicons and logo variants (40px, 64px, full-size)

Hour 2–4 ○ Frontend Development

- Built interactive world map using D3.js + TopoJSON
- Implemented diamond markers ("those circles are old school")
- Activity heatmap: regions glow gold based on news density
- Popups with article previews, sticky hover, full article modals
- Light/dark mode with light as default
- Generated 20 AI-themed city hero images for major tech hubs
- Fixed coordinate display bounce bug (3-digit negative latitudes)

Hour 4–6 ○ Backend Architecture

- Designed full-stack: Convex + Cloudflare Workers + Perplexity Sonar API
- Wrote Convex schema (events, hubs, fetchLog tables)
- Built event queries/mutations, hub promotion logic
- Created Perplexity Sonar integration with URL deduplication
- Set up hourly cron job and REST API endpoints
- Wrote 40 historical seed events (2023–2025)
- Committed 15+ source files to GitHub in a single commit

Phase 2: OpenAI Codex

Hours 6–24 · Iteration, Scaling & Production Polish

After the foundation was committed, Brad switched to OpenAI Codex for rapid iteration. Over the next 18 hours, Codex delivered 16 commits that transformed the prototype into a production app.

■ Ingest Pipeline Overhaul

4,400+ lines changed

- Rewrote news fetching pipeline for production reliability
- Added comprehensive fetch logging with per-article detail tracking
- Built city hero image system: Convex file storage, auto-generation via Nano Banana
- Created state-aware image lookup pipeline (US states get region-specific images)
- Added AGENTS.md coding guidelines for AI agent collaboration

■ Multi-Topic System — The Pivot

- Refactored from single AI topic to fully database-driven multi-topic architecture
- Created topics.manifest.json — declarative config for adding new topics
- Built topic upsert scripts for provisioning/updating topics from manifest
- Expanded to 7 topics: AI News, Global Economy, Global Security, US Politics, US Economy, US Healthcare, Top Stories
- Each topic: own prompt templates, categories, colors, and map scope
- Added SVG icons for each topic
- Began US-level regional support — no longer just global

■ Top Stories Feature

585+ lines, new module

- Built convex/topStories.ts — a full AI-powered story curation system
- Aggregates and ranks events to surface the most important stories
- Feeds into the UI for a curated "top stories" view

■ Mobile Experience

- Designed and implemented a hybrid feed as the default mobile view
- Responsive layout that works on phones without losing map context

Phase 2: Continued

UI Polish, Infrastructure & Data Refinement

■ UI & Theme Polish

- Persistent dark/light theme selection (localStorage)
- Default to system preference
- Restored activity heatmap coloring on desktop
- Modal close button improvements (before/after documented)
- Top stories UI finalization

■ Infrastructure Hardening

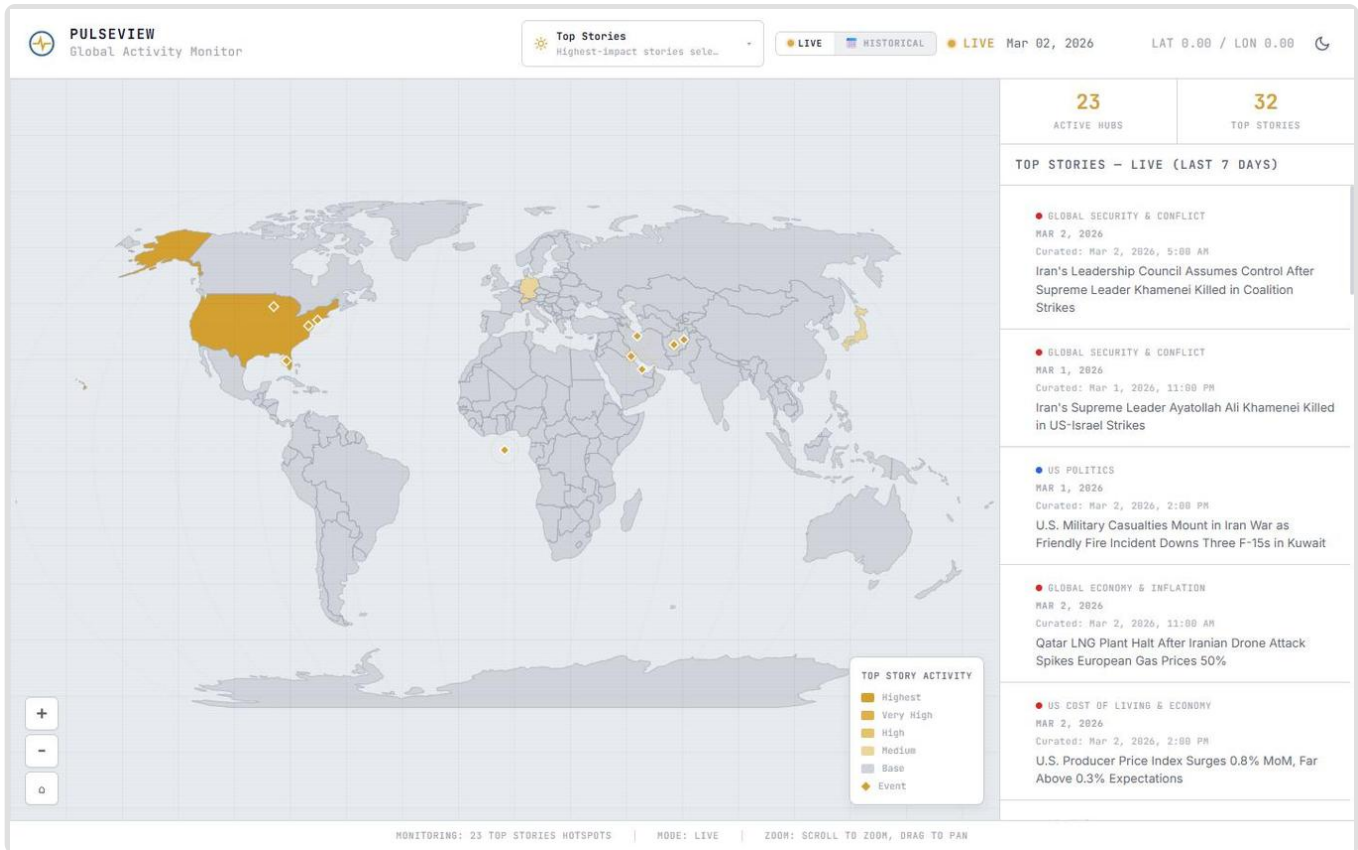
- Built Cloudflare Worker with edge proxy and caching layer
- Per-IP rate limiting for API protection
- Edge cache invalidation and versioning system
- Optimized asset caching strategy for performance
- Added Feb/Mar historical backfills with no-filler ingestion rules

■ Data & Prompt Refinement

- Rebalanced global prompts for better geographic distribution
- Added city-image bootstrap, missing-image detection, and generation scripts
- WebP transcoding pipeline for smaller payloads
- US states data file for regional topic support

The Final Product

pulseview.dev — Live and deployed



pulseview.dev — Live global activity monitor across 7 topics

■ Features

- Interactive global map showing worldwide news activity in real-time
- Diamond markers with category-colored indicators for each event
- Heatmap coloring showing hub activity density (gold = hot)
- 7 topics: AI News, Global Economy, Global Security, US Politics, US Economy, US Healthcare, and Top Stories
- Live mode with hourly auto-refresh via Perplexity Sonar API
- Historical mode with date range picker for exploring past events
- Article modals with hero images, summaries, source links, and dates
- Mobile-optimized hybrid feed view
- Light and dark mode with system preference detection
- Production-grade infrastructure with edge caching and API protection

By the Numbers

18

commits in 24 hours

7

topics (AI, Economy, Security, Politics, Health, and more)

14

Convex backend modules

10

operational scripts

2,500+

lines of frontend code

900+

lines of news ingestion logic

500+

lines of top stories curation

60+

domain names researched

3

logo iterations

20+

AI-generated city hero images

2

AI agents

1

human (Brad Butner)

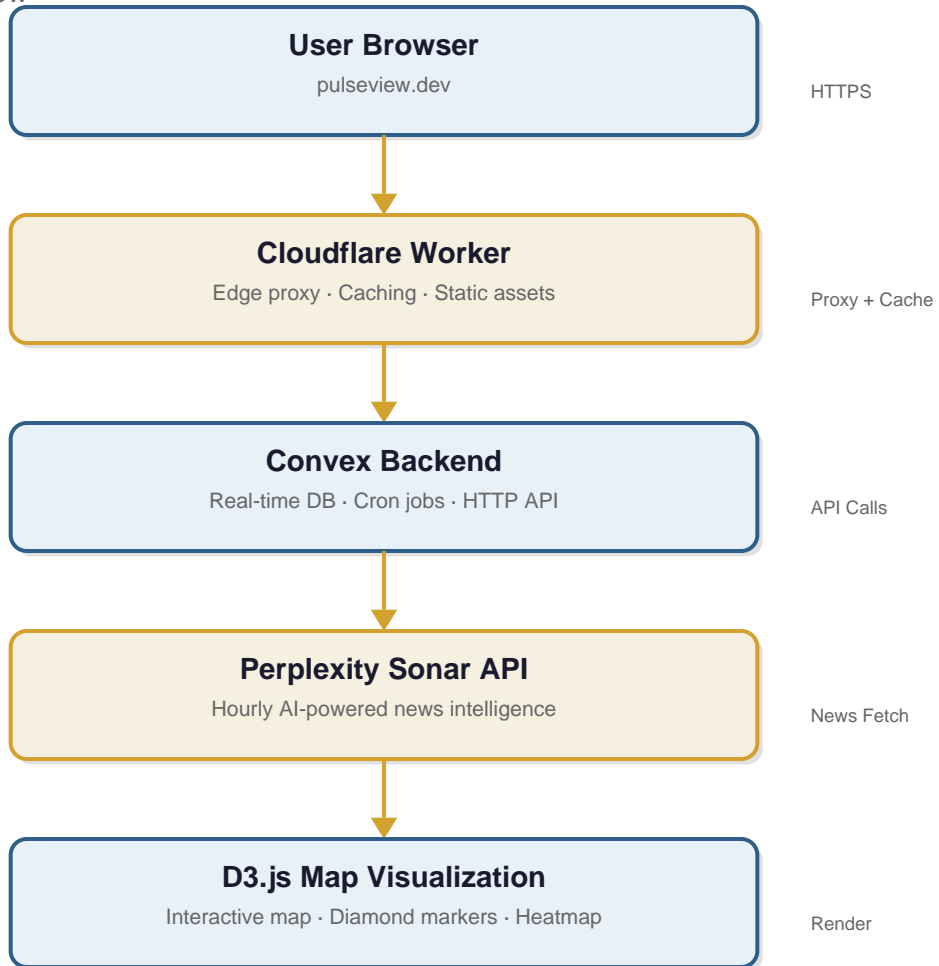
0

lines of code written by hand

Every line of code — generated by AI. Directed by one human.

Architecture

System design overview



What's Next

Two AI agents and one human built a production-grade, globally-deployed, real-time application in 24 hours.

PulseView is an example of how quickly you can turn an idea into a product. The traditional development cycle of weeks or months compressed into a single day, not by cutting corners, but by leveraging AI agents that can think architecturally, write production code, and iterate at machine speed.

The toolchain that made this possible has reached the stage where AI-assisted development is a reliable way to build software. Perplexity Computer handled the creative and architectural work — naming, branding, system design, and the initial implementation. OpenAI Codex took over for the grinding iteration work — refactoring, scaling, hardening, and polishing. Together, they covered the full spectrum of software engineering.

What's remarkable isn't just the speed. It's the quality. PulseView has edge caching, multi-topic support, AI-powered content curation, mobile responsiveness, and production infrastructure. These aren't shortcuts — they're features that typically take teams weeks to implement.

The age of vibe coding is here. Not vibe as in vibes-only — vibe as in a human with a vision directing AI agents that can execute at scale. The human brings the taste, the judgment, the "make it diamonds not circles" moments. The AI brings the tireless execution.

This is just the beginning.



pulseview.dev

Built by Brad Butner with Perplexity Computer + OpenAI Codex