Contextual — Proactive Spatial AI (v0 Technical Overview)

Status: Live iOS prototype (Frontier Tower walk demo)

Repo: https://github.com/loudkatie/contextual-kilroy-walk

What Contextual Is (Plain English)

Contextual is a proactive AI layer that wakes up only when place, time, and identity align.

Contextual is a **proactive AI platform** that operates in the background of real life.

Instead of users asking a chatbot for help, Contextual:

- watches *where* you are
- understands *who* you are (identity + permissions)
- knows *when* something matters
- and acts **only when it's contextually relevant**

The AI agent is born at the same moment as the user's Contextual ID and evolves continuously through behavior, not prompts.

This is **not** a chat app.

This is **ambient, spatial AI**.

Core Thesis

> **Location + Identity + Time + Permissions → Proactive Action**

Contextual is the orchestration layer that decides *when* to surface intelligence — and when to stay silent.

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v0 Use Case: Frontier Tower Contextual Zone

We're demoing Contextual as a **live spatial layer** around Frontier Tower in San Francisco.

While a user walks a few blocks:

- Location triggers fire
- Identity checks pass
- The AI agent proactively surfaces suggestions
- The experience feels whisper-light, not interruptive

This mimics an "event model" without requiring tickets or partners.

User Experience (v0)

1. **Background location trigger**
2. **Apple Watch haptic** (distinct, learned patterns)
3. Optional **audio whisper** via AirPods / phone

   ("Psst. Something's here if you want it.")
4. User taps watch or opens phone
5. App opens directly into an **ongoing AI-hosted conversation**
    - Never a blank chat
    - AI always leads
6. User choices (tap / ignore / delay) feed long-term preference memory

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Identity & Authentication (Pluggable by Design)

Contextual is **not locked into one identity provider**.

We support a modular IdentityProvider interface.

v0 Identity Stack

- Device identity (baseline)
- World App (Proof of Human) — **integrated as a first-class adapter**
- Optional 2nd-party auth:
    - Ticketing (Ticketmaster stub)
    - Calendar (Apple / Google)
    - Others later

World App is strategically valuable (press + partnerships), but **entirely swappable**.

AI Agent Model

Each user has a **persistent AI agent** (“Jeeves” internally):

- Created at Contextual ID birth
- Maintains long-term memory (preferences, reactions)
- Learns primarily from **behavior**, not explicit feedback
    - e.g. powder blue > navy blue
- Memory persists across sessions
- The agent hosts every interaction (no new chats)

We currently use OpenAI’s API for reasoning + generation, wrapped in a Contextual agent layer.

Architecture Overview

iOS-First (by design)

Contextual is unapologetically iOS-native for v0/v1.

Core Components

1. ContextualCore (Swift Package)

Platform layer, reusable across apps:

- Contextual ID & agent lifecycle
- Memory store (local JSON persistence for v0)
- Trigger engine (location / time / identity)
- Connector interfaces
- Demo logging

2. KilroyWalkApp (iOS Demo App)

Thin demo shell:

- Apple Watch haptics
- Audio output (AVAudio / bundled whispers)
- Minimal UI
- Manual fallbacks for live demos

3. Connectors (Composable)

Each data source is a connector:

- WorldIdentityConnector
- CalendarConnector (stubbed)
- TicketConnector (planned)
- Content / DropConnector (for on-site experiences)

Connectors never talk to UI directly.

Proactive, Not Chat-Based

Key non-negotiable:

- The AI never waits for a prompt
- The user never faces an empty input box
- The system speaks *only when relevance is high*

This aligns with “Getting Things Done” principles:

- Minimize cognitive load
- Surface only what matters *now*

Why Events Are the Killer Model (But Not the Only One)

Events give us:

- Clear start/end
- Known location boundaries
- Rich partner data
- Permissioned audiences

Contextual shines *inside* events:

- Merch drops
- Artist pop-ups
- Schedule changes
- Quiet moments
- Serendipitous discoveries

But the same system works for:

- Cities
- Campuses
- Hospitals
- Theme parks
- Everyday life

We’re early, but the architecture is intentional.