# Case Study: Cognixion
## Assistive Mixed Reality UX Platform

Designed a breakthrough BCI-powered headset and communication system for users with severe motor and speech impairments. Combined spatial computing, voice, and AI phrase generation to enable interaction with smart home devices and digital interfaces.

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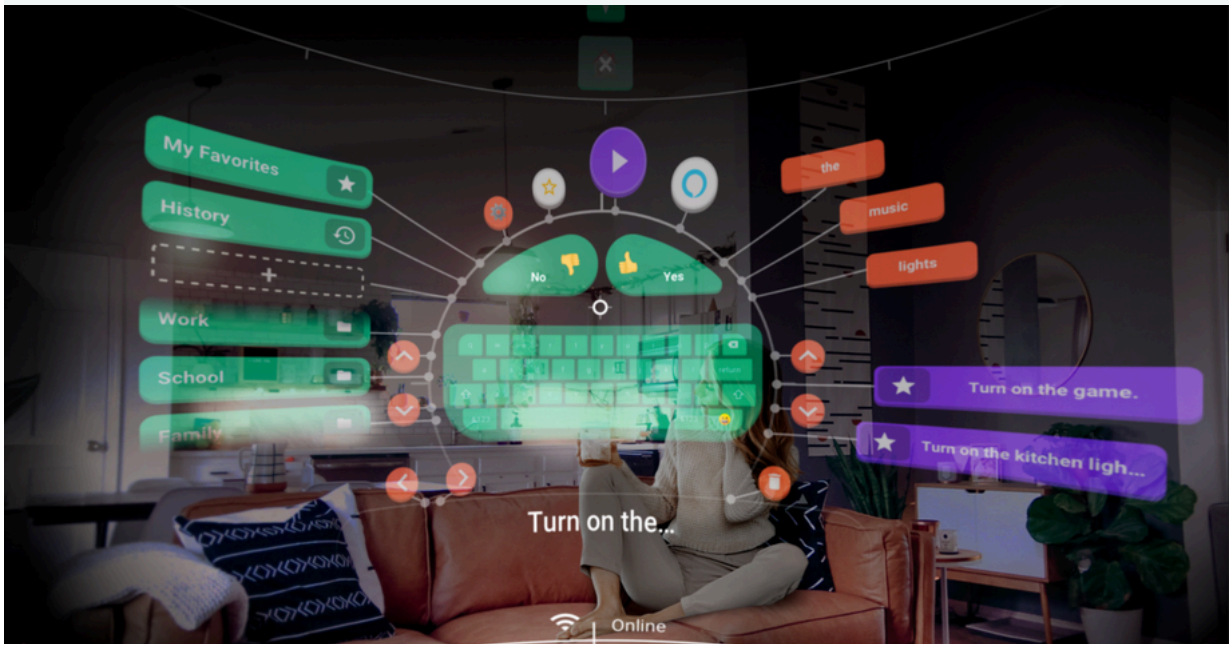


**ROLE**

**Principal Product Designer**
UX strategy, prototyping, and system mapping.
Timeframe: 2019–2021 (multi-phase engagement)

**PROBLEM**

AAC (augmentative & alternative communication) tools were slow, limited, and not spatially aware, leaving patients with neurodegenerative conditions without intuitive ways to communicate.

**MY APPROACH**

- Prototyped multimodal interfaces for AR and voice.
- Designed emoji-enabled phrase builders and gaze-based UIs.
- Conducted onboarding and assistive flow mapping for caregivers.
- Built a shared component library across headset and iOS platforms.
- Delivered production-ready UX assets, UI kits, and R&D documentation.

**IMPACT**

- Supported Alexa integration and platform validation by Amazon.
- Secured $12M in venture funding.
- Enabled iOS app launch and headset shipment.
- Informed first-of-kind brain–AI hybrid interface.

# Case Study: Kantata Boards
## Enterprise SaaS Workflow Reimagined

Reinvented task and project planning inside Kantata (formerly Mavenlink), a platform for enterprise-scale resource planning, time tracking, and delivery.

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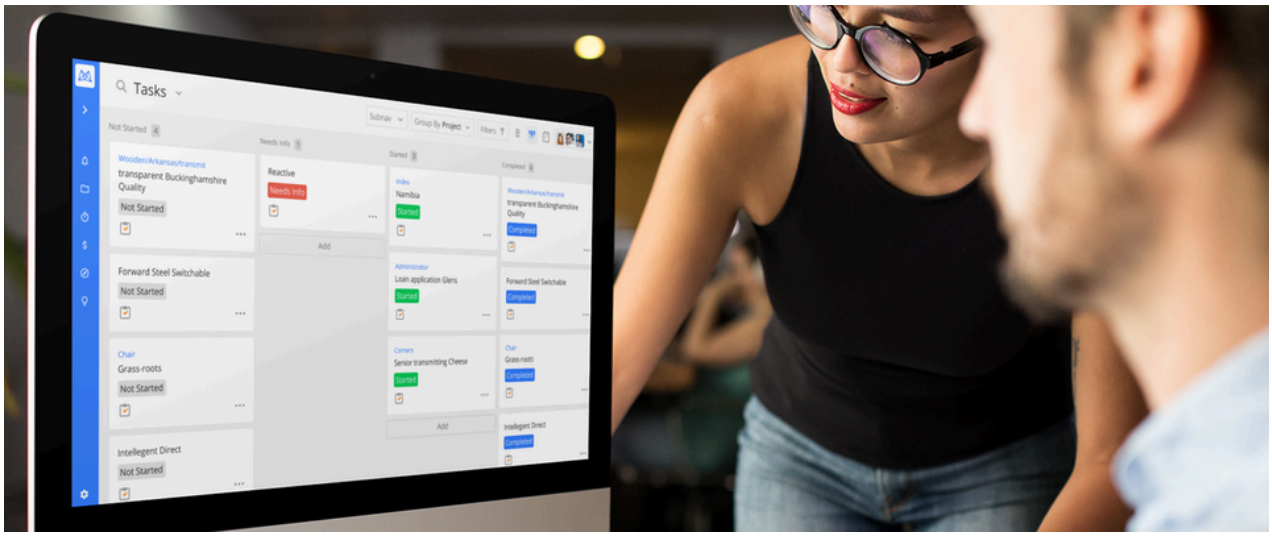


**ROLE**

**Senior Product Designer**
Systems UX, product vision, and execution support.
Timeframe: 2022–2023 (post-rebrand / growth stage)

**PROBLEM**

Legacy task views couldn't scale for global enterprises managing thousands of items. Navigation and visibility were major pain points for project-heavy teams.

**MY APPROACH**

- Designed a new "Boards" view for visual task management.
- Created a modular component system used across the platform.
- Reimagined dashboards and navigation after rebrand.
- Supported workflow UX for permissions, RBAC, and onboarding.
- Produced annotated prototypes, vision videos, and developer-ready assets.

**IMPACT**

- Successful launch increased adoption among PM-focused teams.
- Unified UX across modules via updated design system.
- Strengthened enterprise adoption and investor confidence during rebrand.
- Positioned Kantata as a leader in extensible enterprise workflow tools.

# Case Study: AltspaceVR
## Social Network in Virtual Reality

Led UX for one of VR's earliest social networks, later acquired by Microsoft. Designed systems that worked seamlessly across VR, desktop, and mobile to expand reach and adoption.

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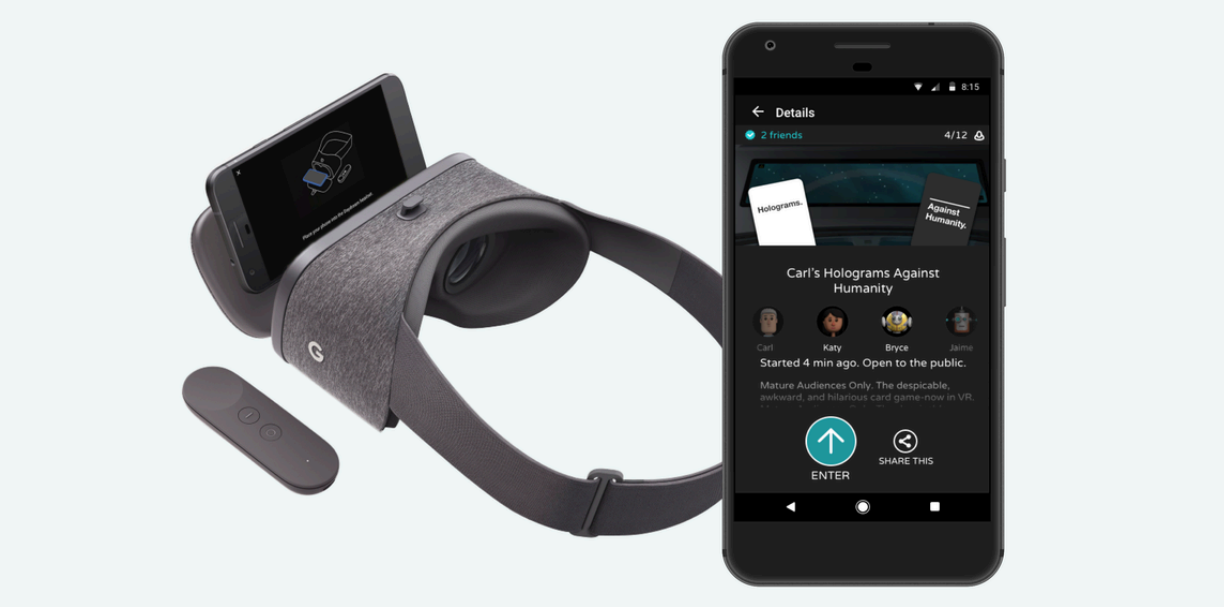


**ROLE**

**UX Design Lead**
Multi-platform UX, social interaction design.
Timeframe: 2015–2017 (startup through Microsoft acquisition)

**PROBLEM**

Early VR lacked accessible, scalable social systems. Interfaces were fragmented across devices, limiting adoption and engagement.

**MY APPROACH**

- Designed cross-platform UI (VR, desktop, touch/mobile).
- Developed friend systems, menus, and event notifications.
- Iterated mobile app for direct VR access.
- Created onboarding and activity feed structures from scratch.

**IMPACT**

- Scaled AltspaceVR into one of the most used VR social platforms.
- Supported acquisition by Microsoft in 2017.
- Set early design standards for social VR that influenced future platforms.

# Case Study: Fandom
## Structuring Fan Knowledge at Scale

Improved content durability and mobile experience for a platform with 1B+ monthly pageviews, supporting both contributors and consumers.

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**ROLE**

**Design Lead**
Structured content systems, mobile-first design.
Timeframe: 2014–2015 (global fan platform scaling)

**PROBLEM**

Contributor-driven content was inconsistent across devices. Mobile users faced poor experiences, limiting knowledge portability.

**MY APPROACH**

- Designed structured input tools for contributors.
- Improved mobile display of rich fan content.
- Built phone-based editing tools for creators.
- Championed mobile-first product design.

**IMPACT**

- Increased mobile performance across 1B+ monthly pageviews.
- Improved quality and durability of contributed content.
- Features remain in use, shaping fandom knowledge portability years later.

# Case Study: Meta Augmented Reality
## Anchoring Digital Origin Points in AR

Authored the Meta UI Guidelines (2018), which directly informed the patent filing for spatial UI interaction at Meta Company (Meta2). The work established a foundational design language for anchoring virtual objects to a digital origin point — bridging neuroscience, ergonomic affordances, and cognitive load.

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**ROLE**

**Senior UX Designer / Prototyper**
AR interface design, guideline authorship, patent contribution.
Timeframe: 2017–2018 (Meta Company, Meta2 headset)

**PROBLEM**

AR lacked coherent interface metaphors. Without rules for object placement, scale, and return-to-origin behaviors, users risked disorientation and cognitive overload.

**MY APPROACH**

- Authored the Meta UI Guidelines v1.0 (2018), codifying UI components (Meta Plate, Pods, Pads, Seatable Objects).
- Defined ergonomic dimensions and interaction affordances (e.g., grab safety margins, pod/pad snap points, seatable object constraints).
- Introduced the anchoring principle: digital objects return to a stable equilibrium point, mimicking gravity/spring forces.
- Delivered documentation that was submitted directly to patent attorneys, translated into the technical claims of US20210225084A1.

**IMPACT**

- Patent granted (System and Method for Presenting Virtual Content in an Interactive Space, 2021).
- Established one of the first neuroscience-informed AR UI languages.
- Anchoring principle became a durable reference point for later AR/VR systems.
- Extended into published work (2021 book), tying spatial anchoring to broader frameworks of resonance and digital origin points.

# Case Study: CLI-FI
## Local Dev Tool for AI-Assisted Media Preprocessing

CLI-FI is a local tool that converts long-form media into structured data for LLM editing. It uses Whisper and OpenCV to extract timestamps, motion cues, and keywords, producing a standardized session index. The result is faster, hi-fidelity AI edits and searchable archives with human oversight at every step.

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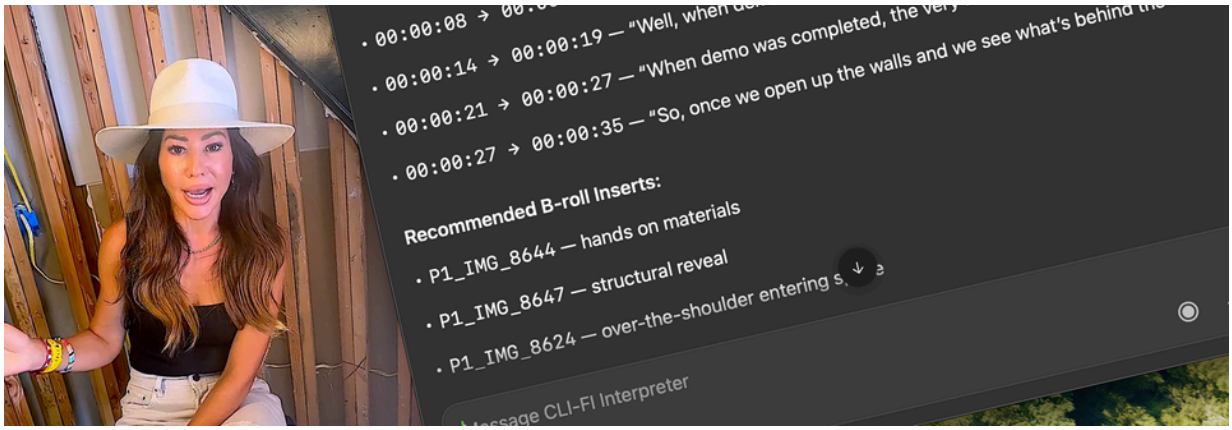


**ROLE**

**Production Engineer / Systems Designer**
AR interface design, guideline authorship, patent contribution.
Timeframe: 2024–2025
Focus: Local developer tools, LLM pipeline prep, data segmentation

**PROBLEM**

LLMs were great at refining text and media — but lacked context when fed unstructured or overly long inputs. Manual editing and prep before model processing was slow, inconsistent, and unreproducible.

**MY APPROACH**

- Built a Local Toolchain (CLI-FI) — Python-based CLI that parses audio/video transcripts into structured 5s/10s/20s segments.
- Integrated Whisper + OpenCV Pipelines — extracts timestamps, keywords, and motion data for scene analysis.
- Standardized Output Schema — CSV/JSON "session index" used for LLM rough-edit and refinement passes.
- Added Human-in-the-Loop Controls — pause checkpoints before generation to maintain signal fidelity and avoid drift.
- Packaged as Reproducible Tool — minimal dependencies, testable CLI, designed for lean creative labs.

**IMPACT**

- Enabled rapid preprocessing for multi-hour sessions in minutes.
- Created a reusable data layer for downstream LLM analysis and caption generation.
- Formed the foundation for human-guided AI editing — where creators can supervise at each stage.

# Case Study: Starlight
## Modular AWS CI/CD for Creative Infrastructure

Starlight redefines AWS SAM as a modular CI/CD framework where S3, CloudFront, Cognito, and Lambda deploy independently. This approach cuts build time, reduces risk, and makes infrastructure scalable and transparent through simple configs and clear validation logs.

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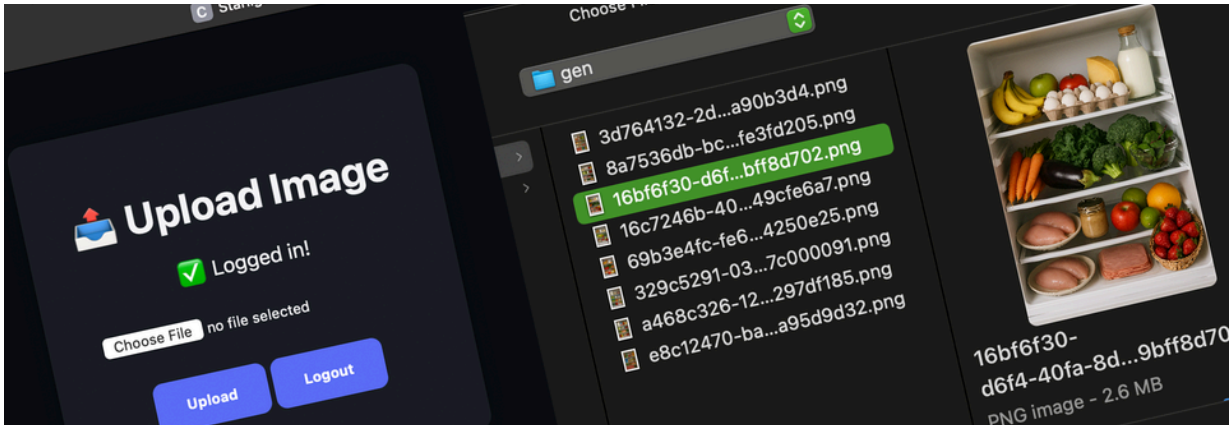


**ROLE**

**Systems Architect / DevOps Designer**
Timeframe: 2024–2025
Focus: Modular CI/CD, CloudFormation/SAM, deployment design

**PROBLEM**

Traditional AWS SAM deployments were monolithic — slow to build, hard to debug, and inflexible for multi-client setups.
Creative automation systems like Maison Rose needed a faster, reproducible way to deploy and manage AI-powered stacks.

**MY APPROACH**

- Developed "Starlight" Framework — modularized AWS SAM templates into discrete deployable units (S3, CloudFront, Cognito, Lambda).
- Parameter-Driven Architecture — YAML configs allowed per-client customization without rewriting core templates.
- Introduced Build Isolation — each stack validated independently, reducing cross-service breakage.
- Visualized Infrastructure UX — designed clear system maps, validation logs, and success/failure markers.
- Integrated With Local Dev Tools — made Starlight compatible with CLI-FI outputs for content automation.

**IMPACT**

- Reduced deploy time by ~70%.
- Simplified multi-tenant deployments and rollback safety.
- Created a modular infrastructure language bridging creative ops and DevOps.

# Case Study: hooks.sh
## Orchestrator for Event-Driven Lambdas

*hooks.sh* is a Bash orchestration tool that validates, deploys, and verifies AWS modules in sequence. It replaces opaque CLI processes with readable logs and structured phases, improving reliability, debugging speed, and developer confidence across environments.

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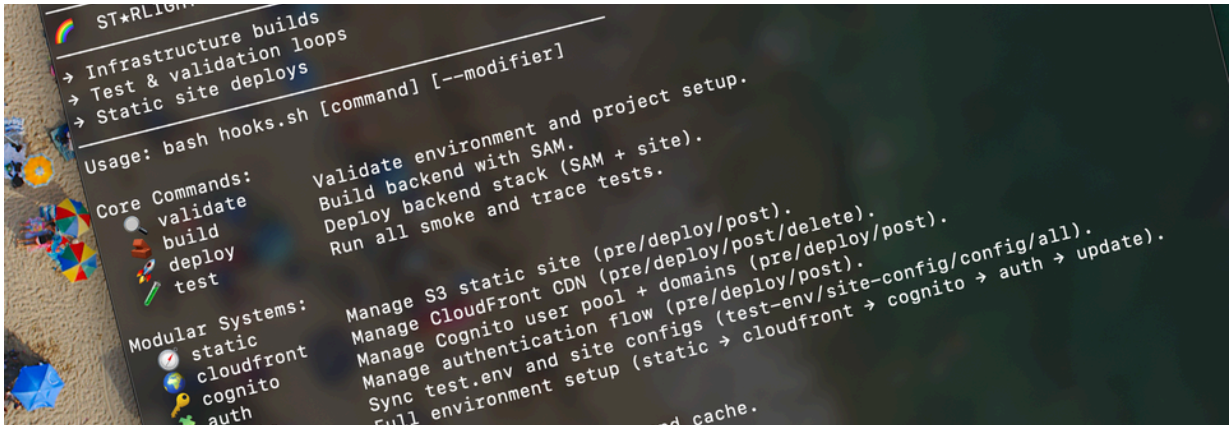


**ROLE**

**Engineer / Tooling Architect**
Timeframe: 2025
Focus: CLI orchestration, validation, dependency management

**PROBLEM**

As Lambda functions multiplied across environments, debugging dependency chains became painful.
The AWS console provided limited visibility into pre-deploy, deploy, and post-deploy phases — leading to drift and failed builds.

**MY APPROACH**

- Authored `hooks.sh` Orchestrator — a Bash CLI managing modular AWS SAM deployments with clear 3-phase execution (`--pre`, `--deploy`, `--post`).
- Implemented Validation Layer — checks for credentials, network access, and CloudFormation readiness before deploy.
- Added Console Debugging Outputs — human-readable logs surface environment mismatches and CORS misconfigurations.
- Unified Stack Management — integrates Starlight modules, Lambda triggers, and API Gateway endpoints under a consistent orchestration model.
- Documented Reproducibility Flow — defined reset and rollback procedures, making the chain of dependencies visible and testable.

**IMPACT**

- Turned AWS CLI chaos into a structured, human-readable workflow.
- Cut error resolution time dramatically (≈ 5× faster debugging).
- Provided a model for developer-centric infrastructure UX — readable, modular, and traceable.