

Mark Manfrey

Principal Design Technologist

El Cerrito, CA · mark.manfrey@icloud.com · markmanfrey.com · linkedin.com/in/markmanfrey

CORE SKILLS

Design: Figma · UX/UI · Interaction Design · Systems Design · Hardware Prototyping · Industrial Design · Design Tokens

Engineering: Unreal Engine 5 (UE5) · Swift/SwiftUI · React · Python · C++ · Arduino · WebSocket · VEX · HLSL
3D & Spatial: Houdini · Maya · Gaussian Splatting · Photogrammetry · Virtual Reality (VR) · Augmented Reality (AR) · After Effects

Artificial Intelligence: Large Language Model (LLM) pipeline design · Multi-agent systems · ElevenLabs TTS · Model Context Protocol (MCP) · Retrieval-Augmented Generation (RAG)

SUMMARY

Twenty years ago I was simulating water and fire for DreamWorks features. Today I'm designing the experience of riding inside an autonomous vehicle. The through-line is the same: complex systems, no established playbook, and a gap between what's technically possible and what's actually usable.

I work at the intersection of design and engineering — not as a generalist who does a bit of both, but as someone who closes the distance between intent and implementation by working directly in the medium. Interaction flows, real-time 3D and Virtual Reality environments in Unreal Engine 5, Large Language Model-driven audio systems, hardware prototypes, custom Figma tooling. The stack follows the problem.

I do my best work where the brief doesn't exist yet — turning ambiguous requirements into systems that customers can use, teams can build, and leaders can ship.

EXPERIENCE

Glydways · Principal Design Technologist

February 2025 – Present · San Francisco, CA

- Designing across the full autonomous transit platform — rider-facing user interface and experience, multi-surface experience systems, real-time 3D and Virtual Reality (VR) in Unreal Engine 5 (UE5), custom tooling, and hardware-software integration
- Built and prototyped integrated rider experiences spanning visual, spatial, acoustic, and thermal modalities, coordinating systems across Arduino, Linux, and iOS via real-time WebSocket architectures
- Developing Large Language Model (LLM)-driven audio interaction pipelines and context-aware in-cabin artificial intelligence (AI) systems using ElevenLabs text-to-speech (TTS) and multi-agent voice architectures
- Building real-time 3D and VR environments in UE5 for experience simulation, Human-Machine Interface (HMI) testing with Quest headsets and ArUco marker tracking, and APTA lighting compliance research
- Created Figma plugin infrastructure and design token systems bridging design intent and engineering implementation across SwiftUI and CSS targets
- Researching rider comfort across climate perception, acoustic environment design, and AI-driven audio interaction — findings feed directly into product iteration

Hyphen · Director of Design

January 2021 – December 2024 · San Jose, CA

- Led end-to-end product design across industrial design, UX/UI, and engineering — owning strategy and execution from concept through deployment
- Built and shipped a machine learning (ML)-powered digital twin system and mobile object recognition tool, expanding core product capabilities into new technical territory

- Designed and prototyped ergonomically enhanced product sub-components, bridging physical and digital product development as UX Engineer and Creative Technologist
- Directed a multi-disciplinary design team delivering Human-Machine Interface (HMI) interfaces and hardware product experiences within manufacturing constraints and deployment schedules
- Established a comprehensive design system across usehyphen.com and HMI surfaces, unifying brand and user experience across the full product touchpoint range

Meta · Senior Product Designer

May 2019 – January 2021 · Menlo Park, CA

- Architected new features for the Workplace enterprise platform, focusing on scalable solutions adaptable across diverse business environments
- Implemented rapid prototyping methodology, accelerating development cycles and improving collaboration with engineering teams
- Designed scalable interaction patterns for Workplace's Groups and Events surfaces, coordinating with engineering across a codebase serving 5M+ enterprise users

Apple · Senior UX Designer

January 2016 – February 2019 · Cupertino, CA

- Led User Experience (UX) design initiatives across 6 critical internal applications, serving 1,000+ users through web and desktop platforms
- Pioneered development of a 3D visualization application, driving significant improvements in user workflow efficiency
- Embedded with engineering teams to prototype directly in-product — reducing handoff ambiguity and compressing iteration cycles on tools with no existing design precedent

Confluent · UX Architect

June 2015 – December 2015 · Mountain View, CA

- Established design strategy and process from the ground up in a fast-paced early-stage environment
- Delivered multiple high-impact customer-facing admin tooling projects while managing evolving priorities

PDI / DreamWorks Animation · Senior FX Artist · CFX Supervisor · UX Designer

2003 – 2015 · Redwood City, CA

- Established the User Experience (UX) discipline from the ground up at PDI, designing enterprise tools for a global studio of 1,500+ artists across animation, modeling, and lighting workflows
- Directed global teams of 45+ as Head of Character Effects — managing technical direction across simulation, rendering, and compositing for feature films including The Croods, Puss in Boots, and Madagascar
- Developed procedural Maya, Houdini, and Python tooling to solve complex visual effects (VFX) and pipeline challenges under tight production deadlines

E D U C A T I O N

Academy of Art University · Master of Fine Arts (MFA) — Animation, Interactive Technology & Visual Effects

1998 – 2001 · San Francisco, CA

University of Michigan · Bachelor of Fine Arts (BFA) — Industrial and Product Design

1994 – 1998 · Ann Arbor, MI