

David Friedrich

2109 Seaport Circle
APT 201
Winter Park, FL
(609) 929 5795
thefeddy@gmail.com

14+ years of experience architecting high-performance React systems and real-time interactive interfaces. Expert at bridging complex backend data (Node.js/MQTT) into fluid, mission-critical UIs for global brands like **NBC**, **Boeing**, and **Universal**. Known for adapting quickly to emerging tech trends and delivering clean, scalable code in high-pressure, multi-project environments.

X Studios, Winter Park, FL — Senior UI Engineer

Lead frontend architect for high-stakes interactive applications, specializing in **modern TypeScript frameworks** and real-time data integration for global enterprise clients.

- **NBC Universal:** Engineered a real-time Show Control suite using **MQTT** and reactive state patterns to synchronize live audio triggers and script timing across distributed tablet arrays.
- **Universal Studios:** Developed high-performance mobile-first experiences for **Halloween Horror Nights**, including AR zone-capture games and narrative progression systems.
- **Boeing:** Built a custom Livery Designer application, bridging physical-to-digital workflows through real-time state management and hardware print-service integration.
- **Modernization:** Spearheaded the migration of legacy jQuery systems into scalable, component-based architectures, significantly improving performance and maintainability..

EDUCATION

Full Sail , Orlando, FL— Bachelors of Science

Web Design & Development

2008 - 2011

PROJECTS (WORK)

Halloween Horror Nights — 2019 - 2022

- **Lead Interactive Engineer**
Interactive Ecosystems: Architected high-performance mobile experiences for Universal's official app, including an **AR zone-capture game** utilizing GPS and **MQTT** for real-time synchronization, and a custom **infinite scroller game** optimized for low-latency mobile performance.

SKILLS

JavaScript / Typescript

React / Vue 3 / Angular

NodeJS

MQTT

LINKS

<https://dfriedrich.dev>

<https://github.com/thefeddy>

- **System Architecture:** Engineered narrative progression systems and QR-based video unlock modules with persistent state, bridging physical park locations with digital content for thousands of concurrent users.
- **Tech Stack:** Leveraged **Angular, Node.js, and Django** to deliver scalable, event-driven architectures capable of handling peak seasonal traffic.

IP Access / AAQ / Cobham — 2014 - 2020

Senior Systems Engineer & UI Lead

- **Modernization:** Orchestrated a multi-year evolution of satellite antenna interfaces, transitioning legacy jQuery panels into high-performance, component-based architectures.
- **Hardware Integration:** Engineered Node.js gateways for Raspberry Pi hardware to ensure low-latency control systems during critical remote deployments.

UniSign — 2024

Lead Frontend Engineer

- **Architectural Migration:** Orchestrated the full-scale rewrite of Universal's internal NDA system from legacy Swift to **Vue 3 (Composition API)**, utilizing **strict TypeScript** for long-term type safety.
- **Component Strategy:** Designed a modular, scalable component system to support evolving legal requirements and seamless deployment across multiple global business units.
- **UX & Compliance:** Streamlined the document-signing workflow for thousands of enterprise users, ensuring 100% compliance with updated security standards and responsive web parity.

NBC Universal The Tour at NBC Studios Show Control — 2024

Senior UI & Systems Engineer

- **Real-Time Event Architecture:** Engineered a high-reliability Show Control suite for *The Tour at NBC Studios*, leveraging **MQTT and WebSockets** to provide sub-millisecond latency for live audio triggers and script timing.
- **Mission-Critical UI:** Architected a resilient iPad-based interface designed for high-pressure environments, integrating guest management and live production workflows into a unified, reactive dashboard.
- **System Reliability:** Dramatically increased system uptime by migrating legacy workflows to a modern, **TypeScript-based** architecture, eliminating sync errors between production staff and technical assets.
- **User-Centric Design:** Collaborated with production teams to

optimize the UI for mobility and speed, ensuring intuitive script-tracking and trigger-control during live operations.

Boeing — 2024

Senior Interactive Engineer

- **Integrated Interaction Design:** Architected a high-traffic photo experience utilizing **Vue 3 and Node.js**, bridging the gap between digital image capture and physical hardware.
- **Hardware-UI Synchronization:** Implemented a real-time communication layer using **MQTT and IPP (Internet Printing Protocol)** to manage seamless state updates between the user interface and industrial printing hardware.
- **Performance Engineering:** Optimized image processing and UI responsiveness to ensure a zero-lag experience for users during high-volume events, focusing on smooth transitions and immediate visual feedback.
- **Distributed State Management:** Managed complex asynchronous flows—from live camera feeds to print-queue status—ensuring data integrity and visual consistency throughout the user journey.

PROJECTS (PERSONAL)

Movie Picking Website — 2024

Lead Architect & React Developer

- **Modern React Transformation:** Leading a comprehensive platform rework into **React 18**, utilizing **Functional Components, Custom Hooks, and the Context API** to manage global state across a complex, multi-user interface.
- **Real-Time Synchronization:** Engineered a "Live Watch" synchronization engine using **MQTT and WebSockets**, enabling real-time playback tracking and collaborative watchlist updates across distributed "communities."
- **Full-Stack React Integration:** Built a robust **NestJS** backend with **PostgreSQL and Redis** caching to support high-performance data fetching and real-time Discord webhook notifications.
- **Advanced UI Patterns:** Implementing high-fidelity React patterns, including **Optimistic UI updates** for social interactions and specialized caching strategies to ensure a seamless "instant-load" user experience.
- **Infrastructure Evolution:** Managed the platform's journey through three architectural iterations (Angular → Vue → React), gaining deep insights into framework-specific performance tuning and state management philosophies.