Hector Falcon

Lead Frontend & Full-Stack Engineer · React · Next.js · React Native · TypeScript

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SUMMARY

Lead Frontend & Full-Stack Engineer with 6+ years building production React and TypeScript products for web and mobile. Leads a 5-person frontend team at a Paradigm-backed AI and robotics startup, owning UI architecture end to end: design systems, data-heavy dashboards and real-time 3D interfaces, plus Node.js APIs and cloud deploys when a feature needs them. Also designed, built and shipped a solo iOS app with React Native and Expo.

SKILLS

Languages: TypeScript, JavaScript, HTML5, CSS3, SQL, Go, Python, Swift, Kotlin

Frontend: React, Next.js, React Native, Expo, Vite, TanStack Query, TanStack Router, TanStack Table, Redux, Zustand, Jotai, React Hook Form, Zod, Tailwind CSS, shadcn/ui, Radix UI, Astro, Angular, Electron

3D & Data Visualization: Three.js, React Three Fiber, WebGL, D3.js, Recharts, ECharts, GSAP, Framer Motion, Blender

Backend & Data: Node.js, Hono, Express.js, REST APIs, WebSockets, Server-Sent Events, MongoDB, PostgreSQL, MySQL, Supabase, Firebase

Cloud & Tooling: Git, GitHub Actions, Docker, Kubernetes, Google Cloud Platform, Vercel, Turborepo, pnpm, Vitest, Jest, React Testing Library, Cypress, Figma

AI & Robotics: Reinforcement learning products, Robot policy evaluation, MuJoCo, Imitation learning, MediaPipe, Claude Code, Cursor, GitHub Copilot

EXPERIENCE

Lead Frontend Engineer | ArenaX Labs **May 2023 – Present**

Toronto, Canada · Remote | AI and robotics company backed by Paradigm and Framework Ventures ($11M raised): AI games, reinforcement-learning competition platforms and evaluation infrastructure for robot policies.

- Owned UI/UX and frontend architecture for every company product (AI Arena, NRN Agents, SAI, RLMesh, Project I), from product requirements to design, implementation and API contracts.
- Designed and built analytics dashboards (models, benchmarks, tasks, embodiments, permutations) with usage and health views, success-rate and sensitivity charts (ECharts, Recharts) and per-episode video comparison.
- Built a browser-based 3D workbench for inspecting robot policies (React Three Fiber, MuJoCo simulation streamed over WebSockets): teleoperation, rollout playback, trajectory and contact-force overlays, and support for a Booster T1 humanoid and UR10e and SO101 robot arms.
- Led a rendering performance pass on a real-time 3D simulation viewer: eliminated per-frame React re-renders, reused GPU textures, cached body lookups and reduced render-lock contention, fixing frame-rate drops during live playback.
- Built cinematic 3D scenes and interactive animations in Three.js for AI Arena, a PvP fighting game where players train AI fighters through imitation learning: camera-path cinematics, NPC animations, a physics-driven prize machine, and marketplace lighting and cameras.
- Built game UI systems for a title with 8,000+ players and 700K+ AI battles: challenges and achievements, an in-game HUD (combo counter, gauges), training settings and reward flows.
- Architected and authored (75% of commits) a reusable robotics UI component library: pnpm and Turborepo workspace, typed per-package builds, an umbrella package and a single-provider integration consumed by web and Electron apps.
- Grew from frontend developer to head of the frontend department, leading a team of 5 engineers: scoped and assigned work, reviewed pull requests, mentored developers and interviewed candidates.
- Authored 850+ commits and ~200K lines of production code across 15+ repositories (React, TypeScript, Node.js, Go, Python) with 100+ merged pull requests.

Full-Stack Developer | Copilot CRM **2022 – 2023**

Remote (US) | Business-management SaaS for home-service companies (CRM, scheduling, routing, invoicing, payments) used by 1,000+ businesses.

- Built React dashboards for real-time operational data (jobs, crews, revenue) handling large datasets for operators across 1,000+ businesses.
- Designed MySQL schemas and optimized queries for large datasets behind Node.js and Express services powering scheduling, invoicing and reporting.
- Built REST APIs and back-end services end to end for operator-facing features, from database schema to React UI.

Full-Stack Developer | Noktos **2021 – 2022**

Mexico City · Remote | Techstars-backed corporate travel and hotel-booking platform.

- Built React and Redux interfaces and Node.js services for a corporate travel platform, streaming financial data through REST APIs and WebSockets into real-time spend dashboards.

Full-Stack Developer | Zeeto **2020 – 2021**

San Diego, US · Remote | Ad-tech lead-generation network for publishers.

- Built responsive, cross-browser UI for embeddable question-based ad units and lead-generation funnels running on publisher sites.

Co-founder & Lead Developer | Punto Banana **2017 – 2021**

Guadalajara, Mexico | Web development studio building websites, web platforms and apps for businesses.

- Built client sites and web platforms with Next.js (SSR/SSG, API routes) and React, optimized for SEO and fast page loads.
- Co-founded a web development studio and led design and front-end delivery for client projects, from requirements and visual identity to implementation and launch.

PROJECTS

Eiros | Founder & Solo Developer **2026 – Present**

apps.apple.com/app/id6761699568 | Fitness and screen-time iOS app live on the App Store: blocks distracting apps until the user completes camera-verified exercise.

- Designed, built and shipped the app solo to the App Store: React Native 0.81, Expo SDK 54 and strict TypeScript, ~60 screens and ~117K lines in a pnpm and Turborepo monorepo.
- Integrated Apple's restricted Screen Time APIs (FamilyControls, ManagedSettings, DeviceActivity) through custom Swift app extensions, and built an Android app blocker in Kotlin (AccessibilityService and native modules).
- Built on-device computer vision that counts push-ups, squats and jumping jacks in real time (MediaPipe pose detection on VisionCamera frame processors with a custom joint-angle rep detector).
- Built the Supabase backend: PostgreSQL with row-level security, 23 migrations, RPCs and Deno Edge Functions, including direct-to-APNs push notifications with ES256-signed JWTs.

EDUCATION

Bachelor's Degree, Business Creation and Development | Tecnológico de Monterrey **2016 – 2021**

CERTIFICATIONS

- freeCodeCamp: Responsive Web Design, JavaScript Algorithms and Data Structures, Front End Development Libraries, Data Visualization, Back End Development and APIs (~1,500 hours)

LANGUAGES

Spanish (native), English (C1, CELPIP 11/12), French (intermediate)