

Erik Henrique Alves Cunha

Senior Full-Stack Software Engineer | React, Next.js, Angular, Node.js, TypeScript, AWS

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SUMMARY

Full-stack engineer with 8+ years building production frontend systems for fintech, healthcare, e-commerce, and banking. Primary stack is **React, Next.js, TypeScript, and Node.js**, with enterprise depth in Angular, RxJS, NgRx, Web Components, and Micro-frontends.

I focus on frontend platform architecture, performance, async orchestration, state isolation, observability, and the BFF and API layers around them. Shipped systems at meaningful scale: payment platforms processing 40M+ transactions a year and €1B+ in revenue, commerce sites serving 8M+ monthly users, real-time healthcare operations dashboards, and digital banking surfaces backing 70M+ customers. Measurable results on Core Web Vitals, TTI, bundle size, deployment time, and conversion.

Recently focused on **AI-assisted engineering systems**: multi-agent workflows, spec-driven development, path-scoped tooling instructions, evaluation pipelines, and engineering automation built into the delivery loop.

SKILLS

Frontend (primary): React.js, Next.js (App Router, RSC, Server Actions), TypeScript, JavaScript (ES6+), Redux Toolkit, TanStack Query, SWR, React Hook Form, React Testing Library, JSX, HTML, CSS, SCSS, styled-components, Tailwind, Storybook, SSR/SSG, rendering, and Core Web Vitals optimization

Frontend systems and architecture: Micro-frontends, Web Components, Nx monorepo, Vite, Webpack, component-driven architecture, design systems, BFF and API integration layers, state isolation

Backend and data: Node.js, Express, REST APIs, Webhooks, event-driven pipelines, async orchestration. PostgreSQL, MongoDB, MS SQL Server, SQLite, ETL, query optimization

Testing and reliability: Jest, Playwright, React Testing Library, MSW, WireMock, Karma, Jasmine, regression coverage on revenue-critical journeys

Cloud and DevOps: AWS (CodePipeline, CodeBuild, S3, CloudFront, EC2, RDS, Route 53), Docker, NGINX, Jenkins, GitHub Actions, Sentry

Performance and accessibility: Core Web Vitals (LCP, INP, CLS), TTI optimization, bundle analysis, code splitting, WCAG 2.1 AA, ARIA

AI-assisted engineering: Multi-agent and subagent configurations, GitHub Copilot, Claude, path-scoped engineering instructions, spec-driven development, evaluation pipelines, automated review, refactor, and scaffolding workflows

PROFESSIONAL EXPERIENCE

Senior Frontend Software Engineer

03/2025 – Present

Betsson Group, *Malta (EU)*

- Lead frontend platform architecture and operational reliability for a PCI-DSS payment and cashier system that processes **40M+ transactions a year and generates €1B+ in revenue across 15+ regulated markets** for a publicly traded operator.
- The platform supports 8+ languages, 5+ brand variants, and 10+ currencies including zero-decimal. It is structured as a micro-frontend topology over an Nx monorepo so brand-specific orchestration stays isolated from shared payment primitives.
- Shipped reusable payment components that run across multiple production brands and host frameworks at the same time, using **StencilJS Web Components with JSX and React.js** runtime integration. One source of payment orchestration, many host runtimes.
- Designed the stateful multi-step deposit and withdrawal flows that have to satisfy audit and regulatory requirements across 15+ jurisdictions. Modeled the async state machines and recovery paths in RxJS and NgRx so error states are part of the design rather than tacked on later.
- Built a 12-agent and subagent **AI-assisted engineering setup** on GitHub Copilot that handles code generation, review, debugging, testing, and architectural validation. Review cycle time dropped, throughput went up, and every action remains reviewable.
- Added regression protection on Jest and Playwright, with WireMock isolating upstream APIs so high-risk KYC and payment flows are not exposed to drift in dependent services.
- Authored a 35+ page frontend architecture knowledge base with diagrams, decision logs, and system boundaries.
- **Stack:** *TypeScript, React.js, JSX, StencilJS, Web Components, Micro-frontends, Nx Monorepo, Vite, Angular, RxJS, NgRx, Ember.js, HTML5, CSS3, SCSS, Tailwind, Storybook, REST APIs, Jest, Playwright, WireMock, GitHub Actions, GitHub Copilot.*

Senior Software Engineering Consulting

04/2023 – 02/2025

Canon Medical Systems Brazil, *Canada (Remote)*

- Owned the frontend platform end to end for a mission-critical real-time healthcare operations system used across a multi-site regional hospital network. The product covers data-dense dashboards, scheduling, and live operational telemetry under high-frequency update load.
- Reduced the JavaScript bundle by about 33% and the CSS bundle by about 98% through lazy loading, code splitting, and a layout refactor. Initial load time dropped about 25%.
- Improved Time to Interactive by about 52% by removing waterfall request chains in favor of concurrent async loading, with TanStack Query cache reuse and component-level memoization (React.memo, useMemo) behind it. This was a rendering-path rework rather than a caching change.
- Automated infrastructure and releases with Bash, SSH, and NGINX. Manual production update time went from about 5 minutes to about 45 seconds, rollbacks down to about 1 minute, and environment-specific config changes about 50% faster.
- Built real-time operational dashboards on **WebSocket (STOMP/SockJS)** streams, with TanStack Query handling server state and isolating remote-data concerns from UI state. Reactive data flow feeds 4 complex dashboard views without UI thrashing under sustained event pressure.
- Structured the codebase with layered separation between domain, application, infrastructure, and presentation concerns to keep it maintainable as scope expanded. Lighthouse accessibility scores stayed near 100 across production views, with WCAG 2.1 AA compliance.
- **Stack:** *React.js, TypeScript, TanStack Query, Nx Monorepo, Vite, WebSocket (STOMP/SockJS), REST APIs, PrimeReact, Chart.js, FullCalendar, Bryntum Scheduler, HTML5, CSS3, SCSS, Storybook, Jest, React Testing Library, Bash, SSH, NGINX, GitHub Actions, Lighthouse.*

React Engineer

12/2021 – 04/2023

Grupo SBF (Nike Brazil, Centauro), *São Paulo, Brazil (Remote)*

- Built scalable frontend systems for high-traffic commerce platforms across Nike Brazil and Centauro, LATAM's largest sports retailer. The unified platform serves **8M+ monthly users across 2+ brand properties**, where LCP improvements show up directly in conversion.
- Reduced page load time by about 32% through code splitting, dynamic imports, image optimization, caching, and bundle analysis. **Core Web Vitals improved about 12%**, mostly from LCP.
- Lifted conversion by about 10% by setting up an experiment-driven workflow. Designed, shipped, and analyzed **20+ A/B experiments** through Google Optimize 360 and Google Analytics, with stop-loss criteria on each.
- Delivered SSR and SSG rendering with micro-frontend boundaries across 2+ brand properties on the shared platform. Brands stay isolated without forking the codebase or coupling their release cycles.
- Maintained Jest, React Testing Library, and MSW suites at around 70% coverage on 4+ revenue-critical user journeys. Mentored 4 junior engineers on React patterns, testing discipline, and review standards.
- Integrated a WebAR try-on into the purchase journey, which contributed to measurable uplift in add-to-cart and purchase completion within that flow.
- **Stack:** *React.js, Next.js, TypeScript, SWR, styled-components, Nx Monorepo, Webpack, SSR/SSG, Micro-frontends, HTML5, CSS3, Storybook, REST APIs, Jest, React Testing Library, MSW, GitHub Actions, Google Optimize 360, Google Analytics.*

Frontend Engineer

01/2021 – 12/2021

Encora Inc. (Daitan Group), *Campinas, Brazil*

- Delivered enterprise frontend features for **VMware Pathfinder**, VMware's global product test-drive and hands-on labs platform, which has served **2.1M+ cumulative labs** across multi-language, multi-region users worldwide (vSphere+, vSAN+, Aria, Tanzu, Horizon Cloud, NSX, Cloud Foundation). Integrated Zoom APIs for embedded customer engagement workflows.
- Introduced structured client-side state management with Redux Toolkit to stabilize async data flows across feature modules. Organized slices, selectors, and async thunks so concurrent requests no longer interfere with each other.
- Built automated regression pipelines reaching about 70% coverage on core business workflows. Contributed to CI/CD on AWS CodePipeline and CodeBuild, with static assets served from S3 and CloudFront.
- **Stack:** *React.js, TypeScript, Redux Toolkit, React Hook Form, Webpack, HTML5, CSS3, SCSS, Jest, React Testing Library, Zoom API, AWS CodePipeline, CodeBuild, CodeDeploy, S3, CloudFront.*

Frontend Engineer

04/2020 – 01/2021

Zup Innovation (Itaú Bank), *Campinas, Brazil*

- Delivered frontend systems for digital banking platforms at Zup Innovation, the Itaú Unibanco-owned tech arm that serves Latin America's largest bank. The bank reaches **70M+ customers across 18+ countries** through regulated digital banking workflows.
- Led the modular UI architecture work. Reusable component libraries and Web Components enabled **micro-frontend integration** across multiple banking applications, decoupling release cycles between teams. Applied accessibility and compliance standards (semantic HTML, ARIA, keyboard navigation) across workflows that required regulatory validation.
- Expanded automated regression coverage across core transactional interfaces and shared components, raising baseline stability on compliance-sensitive flows.

- **Stack:** *TypeScript, Web Components, Micro-frontends, RxJS, Angular, Webpack, HTML5, SCSS, REST APIs, Karma, Jasmine, AWS CodePipeline, CodeBuild, CodeDeploy, S3, CloudFront.*

Frontend Engineer

11/2019 – 04/2020

Venturus, Campinas, Brazil

- Built operational dashboards for CCR AutoBAN (CCR Group / Motiva), which manages the 320 km Anhanguera-Bandeirantes (SP-330 + SP-348) toll corridor, one of Brazil's most strategic highway systems connecting Greater São Paulo to Campinas and the country's interior.
- Engineered modular React components and async data flows with Redux Toolkit to consume REST APIs feeding monitoring, filtering, and operational analysis views across multiple dashboards. Built client-side CSV export and parsing tools so operations teams could generate large reporting datasets directly from the dashboard.
- Added automated testing on complex data-driven UI components to improve regression protection across the dashboard surface.
- **Stack:** *React.js, TypeScript, Redux Toolkit, Webpack, HTML5, CSS3, SCSS, REST APIs, Jest, React Testing Library, Jenkins CI/CD.*

Full-Stack Engineer (MEAN)

02/2019 – 11/2019

Venturus, Campinas, Brazil

- Led development of a foreign trade advisory platform for CGO Assessoria, a 30+ year Brazilian import/export and agribusiness customs specialist supporting compliance-driven workflows for international trade documentation.
- Resolved critical backend performance bottlenecks, reducing reporting API execution time by about **97.5% (from around 40s to under 1s)**, and other endpoints from around 2s to around 200ms. The work involved query redesign, indexing, and fixing ORM access patterns rather than caching shortcuts.
- Redesigned the core data architecture, migrating document-heavy workloads from MongoDB to PostgreSQL with relational modeling and indexing. Built a Node.js **ETL pipeline** for schema transformation, normalization, and validation across the migration.
- Introduced centralized observability with Sentry. Standardized environments with Docker and Docker Compose, raising reproducibility across the engineering team.
- **Stack:** *Node.js, Express, TypeScript, PostgreSQL, MongoDB, Angular, RxJS, Docker, Docker Compose, Sentry, Jenkins.*

Mobile Developer

09/2018 – 02/2019

MB Labs, Campinas, Brazil

- Architected SM Aprendizagem for Edições SM (Brazilian arm of Grupo SM, a Spanish educational publisher present in nearly 80 countries). It is an offline-first cross-platform app delivering didactic content across **5 operating systems** (Android, iOS, Windows, macOS, Linux) from a single codebase. Delivery cost dropped about 80% versus separate native codebases, with around 90% logic reuse.
- Designed an **offline-first sync engine** over REST APIs with incremental updates and conflict resolution. Recorded engagement events locally in SQLite and synced on reconnection with zero data loss across sessions and device types.
- Cut desktop build time by about 40% by integrating Electron for Windows, macOS, and Linux, exposing native filesystem and window APIs from the same web codebase.
- **Stack:** *Ionic, Angular, TypeScript, Electron, SQLite, REST APIs, HTML, CSS, SCSS.*

Full-Stack Developer

07/2018 – 09/2018

MB Labs, Campinas, Brazil

- Built the React frontend and Node.js backend services for the Hondana INDICA enterprise chatbot platform, a B2B HR-tech product integrated with Facebook Workplace. Used by clients including Cia Hering (which reported 450% greater engagement versus prior training methods) and KPMG Business School.
- Designed **asynchronous webhook-based event pipelines** with explicit retry logic and backpressure handling. Added batch push notification delivery on Firebase Cloud Messaging with retry logic for reliable distribution at scale.
- Configured the full cloud infrastructure: EC2 compute, NGINX reverse proxy, Route 53 DNS, S3 static hosting, and Amazon RDS for relational storage.
- **Stack:** *React.js, Node.js, Express, JavaScript, Webpack, HTML5, CSS3, SCSS, REST APIs, Webhooks, Firebase Cloud Messaging, MS SQL Server, AWS (EC2, RDS, S3, Route 53), NGINX.*

Frontend Engineer

10/2017 – 05/2018

Monde Sistemas, Americana, Brazil

- Built responsive frontend features for Monde Sistemas, a B2B SaaS travel-agency management (CRM/ERP) platform used by 2,200+ Brazilian travel agencies.
- Developed reusable Vue.js components, SPA views, and shared design-system patterns across production applications, contributing to maintainable architecture and consistent UX.
- Integrated RESTful APIs following the JSON:API specification, handling async client-side data fetching, state handling, and error management for CRM and booking workflows.
- Added automated unit testing with Jest and Sinon (mocks, stubs, spies), improving reliability and regression coverage across shared frontend modules.
- **Stack:** *Vue.js, JavaScript (ES6+), Webpack, HTML5, CSS3, Stylus, REST APIs, JSON:API, Jest, Sinon, GitHub.*

EDUCATION

Web Development Specialist Co-op Diploma

Cornerstone International Community College of Canada (CICCC), Vancouver, Canada

08/2023 – 02/2024

Bachelor's of Information Systems

Centro Universitário Salesiano de São Paulo (UNISAL), Campinas, Brazil

01/2015 – 06/2020

CERTIFICATIONS, LANGUAGES AND COMMUNITY

Certifications: WES Verified International Academic Qualifications (2022). IELTS General Training C1 (2023). Angular Developer Certification, Alain Chautard / Google Developer Expert (2024).

Languages: Portuguese (Native), English (C1), Spanish (B1), French (A2).

Volunteering, DevOpsDays Campinas (Organizer, 2024): Led speaker sourcing, evaluation, and selection across DevOps, cloud infrastructure, platform engineering, and software architecture submissions. Curated a 10+ talk technical program and coordinated speakers, sponsors, and co-organizers across the full event cycle. Also contributed 4 merged PRs to the official [devopsdays-web](#) Hugo site (190 stars, 709 forks) covering organizer, sponsor, speaker, and event-schedule content for the Campinas edition.

Selected projects, [erikunha.dev](#) (Author, [github.com/erikunha/portfolio](#)): Single-page Next.js 15 + React 19 portfolio on Vercel Edge. RSC-first composition with intentional client islands, a streaming Anthropic LLM endpoint with prompt caching and a monthly token budget, durable contact form with KV-before-delivery semantics, and a CI pipeline that treats performance, accessibility, and bundle size as hard contracts (LCP \leq 1.8s, INP \leq 200ms, JS per-route \leq 120KB gzipped, Lighthouse a11y = 100). TypeScript strict, Biome, Vitest, Playwright + axe-core, Lighthouse CI. Built under a written AI-assisted development contract (CLAUDE.md) with constraints enforced by tooling rather than discipline.

[LAlbamage](#) (Author, npm package): Open-source TypeScript CLI and SDK that classifies, timestamps, and labels images through LLM Vision APIs across 7 providers (OpenAI, Anthropic, Google, Azure, Ollama, AWS Bedrock, Vertex AI), with a hybrid local-to-cloud routing tier. Features async batch processing (~50% cost reduction on supported providers), perceptual-hash burst dedup, temporal consensus voting on ambiguous classifications, embedding-based semantic search, and a plugin lifecycle. Pure TypeScript with Vitest, full CI on GitHub Actions, Zod-validated config, and a published npm SDK.

[react-google-maps-api](#) (OSS contributor, PR #3266): Diagnosed and fixed a React Hooks infinite re-render loop in the Directions API example of react-google-maps-api (a popular community library, ~700K weekly npm downloads). After personally incurring the cost of 61K+ unwanted Google Maps API calls from the library's official docs site, isolated the root cause (callback prop triggering setState on every fire, recreating the callback identity, looping forever), reproduced it on a minimal StackBlitz, and submitted a PR with a stable-callback fix. Coordinated diagnosis with the maintainer and other contributors against a competing PR that did not resolve the loop.