

# John Costa

San Francisco, CA | (201) 213-9855 | costajohnt@gmail.com | linkedin.com/in/costajohnt

## Skills

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**Languages & Frameworks:** TypeScript, JavaScript, Ruby on Rails, HTML, CSS

**Frontend:** React, Mobx, TanStack Query (React Query), Next.js, Vite, TailwindCSS

**Backend & DBs:** Node.js, Express, PostgreSQL, MySQL

**Architecture & Patterns:** Domain-Driven Design, Functional Programming, REST API Design, OOP

**Tooling & Testing:** RSpec, Jasmine, Git, Storybook, Pusher, Github Actions

**Infrastructure & DevOps:** AWS (Lambda, Step Functions, S3, CloudFront), Docker, CI/CD Pipelines, SRE

## Experience

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### Associate Director, Engineering

Sept 2024 – Present

ExecOnline, Inc. | Remote

Promoted into a hands-on leadership role focused on technical architecture and team mentorship—similar in scope to a Staff or Lead Engineer at most product companies.

- Led a cross-functional team of 8 engineers (iOS, React/TypeScript, Rails) to deliver key initiatives including an AI chat builder, full platform reskin with Storybook, a learning insights dashboard, and iOS enhancements to match web—enabling scalable enterprise learning customization and reporting.
- Rebuilt the Learning Collection Builder into a real-time, AI-powered single-page app, replacing a slow multi-step wizard. Used client-side in-memory dictionaries to eliminate round trips and reduced publish time from several minutes to under 3 seconds. Architected the integration layer and led cross-functional implementation, enabling dynamic form updates via conversational AI.
- Proposed and led the integration of TanStack Query to implement client-side caching with background revalidation, reducing perceived load times on key pages by up to 90% (e.g. 8s → <1s) and cutting redundant server requests by approximately 40%; leveraged localStorage to persist cache across sessions, delivering an instant-load experience on return visits.
- Took initiative to evaluate emerging AI development tools, regularly testing new solutions and sharing findings with the team; led the collaborative adoption of Cline, a modern AI assistant for VSCode, which significantly boosted developer productivity and satisfaction, and sparked a broader shift toward writing AI-friendly, well-structured code optimized for intelligent navigation and generation.

### Software Engineer 2, SRE

Feb 2022 – Sept 2024

ExecOnline, Inc. | Remote

- Led ~95% of code reviews during a 3× team expansion (9 to 25 developers) and mentored 16+ engineers in functional programming via code examples, internal videos, and architecture talks—instilling team-wide fluency in React, TypeScript, and Rails.
- Advanced engineering standards by introducing type-safe patterns, mentoring new hires, and leading internal talks—strengthening design fluency and code clarity across the organization.
- Architected the end-to-end Stripe payment flow for a new B2C offering, enabling instant user access post-purchase. Implemented a multi-step reconciliation process with client-server-Stripe synchronization using an interstitial status page and real-time Pusher WebSockets.
- Improved code quality and maintainability through extensive refactors, internal tooling, and advocating strong typing as a foundation for correctness (“proofs over tests”), complemented by targeted Jasmine and RSpec unit tests.
- Enhanced security and modernized the application stack by upgrading dependencies, automating workflows via GitHub Actions, and consolidating common logic into reusable shared libraries.
- Stepped into an unofficial tech lead role, culminating in promotion to Associate Director to formalize leadership and architectural ownership.

### Software Engineer 1

July 2021 – Feb 2022

ExecOnline, Inc. | Remote

- Built a scalable video authoring pipeline using AWS Step Functions, Lambda, and Bitmovin API to automate multi-format encoding and asset distribution. Introduced a reusable video library model, reducing redundant uploads by 80% and saving teams dozens of hours monthly. Added validation and alerting to ensure artifact completeness, cutting debugging time by ~70%.

- Architected a robust video delivery system powering playback across internal tools, client-facing dashboards, and the learning platform. Designed a RESTful JSON API to dynamically serve video metadata and stream URLs, enabling adaptive playback via JW Player with bandwidth-aware resolution shifting. Built multi-tiered fallbacks (e.g., MP4 playback, Vimeo integration) and configurable provider overrides at the org, program, and user level — reducing playback failures by over 90% and improving average video start time by 30%, significantly enhancing learner experience and reducing support inquiries tied to video issues.
- Enabled ExecOnline’s transition from a tech-enabled content delivery model to a scalable SaaS platform by leading enhancements to learning access and delivery. Spearheaded the shift from scheduled to on-demand programs, supporting self-paced learning and modular in-house course creation—boosting client program utilization by over 50%. Automated enrollment workflows and accelerated revenue recognition under a credit-based model, while reducing operations overhead and increasing platform scalability.

## Ruby on Rails Engineer

ExecOnline, Inc. | San Francisco, CA

Feb 2016– July 2021

- Built and maintained core features of the ExecOnline platform during a high-growth phase, contributing to both backend systems in Ruby on Rails and frontend functionality using vanilla JavaScript, jQuery, and early React (class components).
- Co-led development of the Enterprise Portal, a new internal-facing platform to manage participant enrollment, content authoring, and course operations — improving admin efficiency and laying the foundation for future customer-facing tools.
- Championed incremental modernization of the codebase, advocating for stronger separation of concerns in Rails apps and gradually introducing React-based interfaces for better UX and maintainability.
- Maintained high code quality through robust automated testing with RSpec and Jasmine, consistently achieving >85% test coverage for critical systems and preventing regressions during multi-month refactor and rollout projects.

## Education

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General Assembly | Full Stack Web Development

University of Vermont | B.A. Philosophy