Padmaja Madhavan

Senior Software Engineer | Frontend

madhavan.padmaja@gmail.com | (832) 908-4008

Summary

Senior Frontend Engineer with 10+ years building scalable global web applications, shared infrastructure, and developer tooling. Delivered localization for global learners, led a 15-year-old monolith's decomposition into 34 independently deployable microfrontends across 18 teams, and built AI-assisted delivery, testing, and remediation systems.

Experience

Senior Software Engineer, Frontend, ThousandEyes – Seattle Dec 2024 – present

Led frontend platform modernization at ThousandEyes, building the architecture and delivery systems that enabled 18 engineering teams to decompose a 15-year-old monolith into 34 team-owned microfrontends.

- Built AI-assisted, self-service tooling for microfrontend scaffolding, CI/CD, and platform compliance, reducing setup time from one week to 30 minutes; moved static asset delivery from Kubernetes to FedRAMP-compatible serverless infrastructure, eliminating unnecessary compute capacity and backend operational overhead.
- Decoupled microfrontend releases from the shared AppShell and monolith deployment cycle, reducing deployment lead time from two days to 20 minutes and enabling on-demand releases.
- Designed and piloted full continuous delivery across four microfrontends, using Kargo AnalysisTemplates and Cypress tests covering 10 critical user flows to gate automated promotions; built an AI skill that generated promotion-gate and nightly test coverage, replacing manual per-environment validation and catching release-blocking configuration defects.
- Developed an AI vulnerability-remediation agent that monitors Jira, implements fixes, opens pull requests, advances tickets to review, and notifies teams in Slack, increasing remediation throughput from three tickets per engineer per week to as many as 35 tickets per day.

Frontend Engineer, Amazon (People Experience & Foundation, AtoZ) – Seattle Dec 2022 – Jan 2024

Led the design, implementation, and delivery of personalized global navigation for Amazon's AtoZ - an intranet experience used worldwide by 1.2M employees.

- Led the implementation of a micro frontend architecture to standardize the user experience across five distinct sites. Utilized the app-shell model and module federation to seamlessly integrate and manage shared components. This strategic architectural shift resulted in a threefold increase in deployment speed and streamlined development processes.
- Uncovered and addressed significant latency issues in legacy service integration by implementing advanced Next.js hybrid rendering techniques (SSR + CSR). Conducted in-depth performance analysis using profiling tools, identified bottlenecks, and optimized the rendering process. Successfully reduced the initial load time from 12 seconds to 0.6 seconds, achieving a 95% improvement in performance and enhancing the overall user experience.
- Collaborated with PMs, UX, software, and security engineers to deliver a high-quality launch. Designed and implemented roll-out strategies such as feature toggles and canary releases, ensuring minimal disruption and robust performance. Developed automated deployment pipelines using CI/CD tools, conducted thorough performance testing and security audits, and optimized application scalability and reliability, resulting in a 99.9% uptime during the launch period.

Frontend Engineer, Amazon (Global Learning & Development) – Seattle July 2019 – Nov 2022

Built tools and services to create 1000+ e-learning courses backed by Machine Learning models to scale and innovate workplace learning for Amazon employees.

- Enabled course localization for Amazon's global learners using i18n and react-i18n, creating 40 non-English courses.
- Implemented client metric collection and continuous data streaming to an internal data lake using AWS Amplify, Athena, and Quicksight, shaping business and engineering strategies.
- Enhanced developer productivity by automating commit tracking and testing, reducing weekly deployment time by 50%.
- Developed image upload/gallery features with Amazon S3 and implemented image embedding with Slate.js, enabling 300+ image-rich courses in 3 months.

Frontend Developer, Meteorcomm – Renton May 2016 – June 2019

Built a real-time Dashboard to track the utilization percentage of railroad assets to improve operational efficiencies.

- Developed an intuitive GIS-based web application using OpenLayers and Angular, which led to an increase in the U.S. railroad subscription count from 4 to 14 within six months. This success secured project funding for an additional 3 years.
- Initiated the creation of a reusable UI component library, significantly reducing the initial UI setup time by providing pre-built basics. This effort led to a 25% reduction in feature development time.
- Integrated Google Analytics into the codebase to enhance data-driven decision-making, leading to more informed and strategic choices in feature development.

Research Assistant (Android Developer), ThinkLab (UTD) – Dallas Jan 2015 – May 2016

- Led the end-to-end development of an Android tablet app for a research study, serving over 80 children (7-10 years old). Innovatively utilized researcher insights to craft a second app tailored for diverse user groups.
- Enhanced the researchers' efficiency by overhauling the data management system, shifting from manual recording to a streamlined process that logs user actions in an SQLite database. This transition reduced the researchers' time spent on data management by 30%.

Education

University of Texas at Dallas, M.S. in Human Computer Interaction Aug 2014 – Dec 2015

Skills

Programming languages: JavaScript (ES6+), TypeScript, HTML, CSS

Full-Stack & Web: React, Next.js, Express (Node.js), GraphQL, Redux, Angular, Vue, Slate.js

Architecture & Platform: Internationalization, Microfrontends, Module Federation, CI/CD, Continuous Delivery, Serverless, Kubernetes, AI Agents, Developer Experience

Quality, Data & Cloud: Cypress, Jest, AWS Services, S3, Athena, Quicksight, SQLite, Web Performance, Accessibility