

EXECUTIVE PROFILE

Software Engineer with 6+ years of experience building frontend applications, enterprise design systems, developer tooling, reusable component libraries, and web platforms across Manufacturing, Insurance, Finance, Banking, and E-commerce. Experienced in React, TypeScript, Node.js, Next.js, Lit/Web Components, Webpack, monorepos, microfrontends, Storybook, automated testing, CI/CD, accessibility, and frontend performance optimization.

TECHNICAL EXPERTISE

Frontend: TypeScript, JavaScript, React, Next.js, Lit/Web Components, Angular, HTML5, CSS3, SCSS	Architecture: Design Systems, Component Libraries, Microfrontends, Monorepos, Nx, PNPM/Yarn	Build & Performance: Webpack, Vite, Code Splitting, Tree Shaking, Lazy Loading, Virtualization
Testing & Accessibility: Jest, Vitest, Playwright, Storybook, WCAG 2.1 AA, ARIA	AI & Developer Tooling: AI Agents, MCP, Spec-First Architecture, JSON Schema, Prompt Engineering	Cloud & Delivery: AWS, Azure, Microsoft Entra ID, Docker, GitLab, Jenkins, CI/CD

PROFESSIONAL EXPERIENCE

Caterpillar Inc. / Cat Digital Software Engineer II June 2025 - Present

A-Blocks - Enterprise Design System, Platform Ecosystem & AI-Assisted Engineering

- **Agentic Design Lifecycle (ADLC):** Engineered a spec-first AI architecture using schema-driven component contracts, deterministic Playwright validation, self-correction loops, and custom MCP integrations.
- **AI Quality Framework:** Established a 77-check validation model spanning component quality, runtime behavior, accessibility, security, and performance.
- **Platform Modernization:** Modernized 5 environments by migrating Blocks/Atoms to Microsoft Entra ID and upgrading CloudFront/Lambda@Edge from Node.js 20.x to 24.x.
- **Design-System Scaling & Token Automation:** Rolled out Brand Refresh and Dark Theme across 85+ components and ~1,630 design tokens across 3 themes; Figma-to-token sync reached ~80-90% automation.
- **Large-Scale UI Performance:** Architected virtualized hierarchical tables handling 1,000+ nested records, custom resizing, and collapsible regions.
- **Security:** Resolved 7 high/medium Bug Bounty and PII vulnerabilities, led secret-leakage investigations, and supported 7 production rotations.
- **Delegation & Mentorship:** Managed a 177-work-item footprint, including 53 delegated stories/defects across 15+ engineers.
- **Repository Governance:** Purged 2,664 stale branches and reduced 25 deployment pipelines to 6 unified targets.

Stack: TypeScript, JavaScript/ESNext, Lit/Web Components, React, Angular, Next.js, Design Systems, Design Tokens, Figma, Storybook, MCP, JSON Schema, Nx, Microsoft Entra ID, AWS Lambda, CloudFront, Lambda@Edge, Vitest, Jest, Playwright, WCAG 2.1 AA, ARIA

Blocks Frames - Enterprise Web Component Shell

- Developed helios-frames, an enterprise Lit/Web Component library providing reusable Header, Footer, Profile, and Navigation infrastructure, reducing application-level redundancy by ~30%.
- Built shared platform architecture supporting React, Angular, and Next.js applications within a monorepo with reusable playgrounds.
- Integrated B2C and Entra ID authentication plus hybrid localization.

Stack: TypeScript, Node.js, Lit/Web Components, React, Angular, Next.js, Nx, PNPM, Storybook, AWS, Azure, Entra ID

EPAM Systems Software Engineer II July 2022 - May 2025

Everest Reinsurance / EverTech - Insurance Underwriting Platform

- Led frontend architecture discovery and built a production React + TypeScript application from scratch using Webpack.
- Architected a private npm React component library with Material UI and Storybook.
- Implemented Redux middleware, internationalization, REST API integration, and Azure/GitLab CI/CD.
- Reduced bundle size by 60% and improved initial load time by 40% via code splitting, tree shaking, lazy loading, and dependency optimization.
- Developed unit tests with React Testing Library/Jest and reusable hooks/utilities.

Stack: React, TypeScript, Webpack, Redux, Material UI, Storybook, AG-Grid, Styled Components, Jest, Azure, GitLab, SQL

LSEG Codebook - Jupyter Notebook Extensions for Data Science

- Developed custom JupyterLab/Jupyter Notebook extensions to improve data-science workflows.
- Managed reusable React widgets integrated into Jupyter experiences and maintained a Python rendering library.
- Collaborated across frontend, backend, cloud, and DevOps teams to resolve defects, deployment failures, and integration issues.
- Produced technical documentation and participated in code reviews.

Stack: JupyterLab, React, Vue.js, TypeScript, JavaScript, Webpack, Python, Docker, Jenkins, Jest, AWS

E-commerce Microfrontend Platform

- Implemented a microfrontend-based Next.js storefront supporting checkout, payments, and CRED-related functionality.
- Worked with MACH-aligned architecture and commercetools, Contentful, GraphQL, and Adyen.

Stack: Next.js, TypeScript, Frontastic, commercetools, GraphQL, Contentful, Adyen

Discover Financials - Card Member Assistance (CMA)

- Developed React applications for card members across multiple banking interfaces and reusable user journeys.
- Created reusable React components and shared UI templates, contributed to project structure, and defined frontend standards.
- Worked across analysis, design, development, testing, deployment support, and production support.
- Developed responsive interfaces using React, Redux Toolkit, JavaScript, TypeScript, HTML5, CSS3, Bootstrap, and SCSS.
- Migrated class-based React implementations toward functional components and Hooks.
- Improved performance using React Hooks and React DevTools profiling.
- Implemented ADA/accessibility requirements and supported Jenkins/Git CI/CD, SiteCatalyst, Playwright, and Sonar.

Stack: React, React Hooks, Redux Toolkit, TypeScript, JavaScript/ES6+, HTML5, CSS3, SCSS, Bootstrap, Playwright, SiteCatalyst, Jenkins, Git, Sonar, React DevTools

Bus Ticket Booking Web Application - MFRP

- Designed and created a responsive booking interface for end users.
- Managed reservation data and registered-user booking status to support ticket generation and printing.

Stack: React, ES6, CSS3, HTML5, Bootstrap, Redux

EDUCATION

B.Tech., Electronics & Communication Engineering
National Institute of Science & Technology, Berhampur

CGPA 8.02
2015-2019