

Ritik Agrawal

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Senior Software Engineer with 5 years of experience building high-performance, data-intensive web and desktop applications. Specialized in React, TypeScript, Electron, real-time UI systems, offline-first architecture, and frontend performance, with hands-on experience in Node.js, APIs, and distributed application workflows. Experienced in owning complex workflows, optimizing rendering and data-processing pipelines, and designing scalable frontend systems.

PROFESSIONAL EXPERIENCE

Senior Software Engineer (Frontend), Impact Analytics May 2026 – Present | Bengaluru

- **Microfrontend Architecture:** Implemented and improved **Webpack Module Federation and microfrontend patterns**, working across module boundaries, integration, shared dependencies, and independent frontend delivery.
- **React Performance:** Optimized complex React components by reducing unnecessary re-renders, improving state handling, and enhancing UI responsiveness.
- **AI-Assisted Engineering:** Designed and structured domain knowledge across application modules and workflows to enable AI-assisted debugging, code understanding, and implementation.

Akridata

Software Engineer II (MTS - 2) Jan 2024 – Apr 2026 | Bengaluru

- **Product Ownership:** Led development of **Vision Assist** (Electron desktop app) and **Vision Command** (web dashboard) used by 20+ global manufacturing clients, improving inspection accuracy by 30% and defect-monitoring adoption by 25%.
- **Real-Time Architecture:** Architected an Electron desktop UI platform processing 6,000+ image events/day with low-latency rendering and backend integration through **gRPC** and **Triton**.
- **Offline-First Systems:** Led frontend architecture for real-time and offline-first workflows, balancing performance, consistency, reliability, and scalability.
- **Performance Engineering:** Engineered rendering and data-processing pipelines using **IPC**, **worker threads**, **batching**, and **asynchronous** processing to keep UI updates responsive under **high-frequency** image streams and large datasets.
- **Data Visualization:** Built interactive image-analysis workflows using **D3.js** and **ECharts**, including heatmaps, bounding boxes, zoomable views, and real-time metrics.
- **Reliability & Mentorship:** Designed fault-tolerant workflows with retries, progress tracking, and auto-recovery, while mentoring peers on frontend architecture, performance optimization, and reusable engineering patterns.

Software Engineer I (MTS - 1) May 2022 – Dec 2023 | Remote

- **Frontend Engineering:** Developed scalable, data-intensive production applications using **React**, **Vue**, **TypeScript**, **Redux**, and **Vuex**, delivering complex workflow-driven features.
- **Architecture Modernization:** Refactored legacy monolithic frontend codebases into modular, domain-driven architectures with reusable components and shared libraries, improving maintainability and simplifying feature development.
- **State Management:** Designed predictable Redux and Vuex patterns for cross-workflow data, reducing UI inconsistencies.
- **Web Performance:** Reduced initial load time by ~30% (3.2s -> 2.2s) using **Vite**, code splitting, and lazy loading.
- **Engineering Quality:** Improved reliability through unit testing, CI/CD, pre-commit hooks, and dependency upgrades.

Frontend Intern Dec 2021 – May 2022 | Remote

- **Product Workflows:** Developed **CRUD** workflows with validation, reusable components, and lazy loading.
- **Access Control:** Built **RBAC**-based user management workflows, reducing onboarding issues by ~40%.

SKILLS

Languages: JavaScript, TypeScript, C++

Frontend: React, Vue, Redux, Vuex, HTML, CSS, Tailwind, ECharts, D3.js, MUI, AG Grid, i18n

Backend: Node.js, REST APIs, gRPC, WebSockets, PouchDB, Postgres, Redis

Performance & Frontend Systems: Rendering optimization, real-time UI, code splitting, lazy loading, Vite, Webpack, Gzip

Testing & Tooling: Vitest, Jest, Playwright, CI/CD pipelines, Pre-commit hooks, unit testing, integration testing

ACHIEVEMENTS

- **Competitive Programming:** 1,000+ problems across LeetCode, Codeforces, CodeChef, and HackerRank.
- **Contest Performance:** LeetCode 1687 (Top 15% in weekly contests) | CodeChef 4★ | Codeforces 1257.
- **Google Kick Start:** Round C 2021 — **Rank 978 / ~7.9K participants**
- **Recognition:** ADstar Award (Akridata) for impactful technical contributions.

EDUCATION

Jaypee Institute of Information Technology
Bachelor of Technology in Computer Science and Engineering

Jul 2018 – Jun 2022 | Noida, India