

Rahul Nainala

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[GitHub](#) | [LinkedIn](#) | [Portfolio](#)

Professional Summary

Full-Stack Engineer with 3+ years of experience building scalable, production-grade web systems across frontend, backend, and platform layers. Experience includes React, Next.js, TypeScript, Python, FastAPI, micro-frontend architecture, real-time visualization, and performance optimization, with delivered impact across enterprise products and internal developer tooling.[file:2]

Currently working in a quantum AI startup environment, with hands-on focus spanning full-stack product development, distributed systems thinking, API design, developer experience, and modern cloud-native workflows. Background also includes machine learning interfaces, data visualization, and technical leadership through mentoring and architecture initiatives. [file:2]

Core Skills

- Languages: Python, TypeScript, JavaScript, Java, SQL.[file:2]
- Frontend: React.js, Next.js, Three.js, Tailwind CSS, Redux, React Router, HTML5, CSS3, Webpack 5, Vite.[file:2]
- Backend: FastAPI, Django, REST APIs, microservices architecture, backend design, system design, distributed systems.[file:2]
- Data & Databases: PostgreSQL, MongoDB, schema design, indexing strategies, SQL optimization, query performance tuning.[file:2]
- DevOps & Cloud: Docker, Docker Compose, GitHub Actions, CI/CD, AWS (S3, EC2, RDS, Lambda, CloudFront), Linux, AWS CLI.[file:2]
- Testing & Quality: Jest, Pytest, unit testing, integration testing, mocking, code coverage, performance benchmarking.[file:2]
- Architecture: Micro-frontends, Module Federation, monorepo setup, design patterns, SOLID principles, caching strategies, scalability planning.[file:2]
- Domain Exposure: AI product interfaces, machine learning integration, technical documentation, developer tooling, 3D data visualization, quantum AI startup engineering context.[file:2]

Professional Experience

QAIG — Full-Stack Engineer

Hyderabad / Remote | December 2025–Present

- Building product and platform features in a quantum AI startup environment across frontend and backend systems, with emphasis on scalable engineering practices and rapid iteration aligned to research-driven product needs.
- Contributing across modern web application architecture, API-driven workflows, and developer productivity, leveraging prior experience in React, Python, distributed systems, and cloud-native tooling.
- Working at the intersection of application engineering and emerging quantum/AI use cases, bringing full-stack execution, systems thinking, and strong implementation ownership.

Note: This section is phrased conservatively from the information provided in the conversation about current QAIG work, without inventing unsupported metrics or project claims.

Rubus Digital Pvt. Ltd. — Software Developer

Hyderabad, India | June 2024–December 2025

- Architected and shipped a Three.js-based 3D dashboard with 30-second polling API overlays, enabling real-time data visualization for 50+ enterprise clients.[file:2]
- Designed a scalable JSON-schema-driven system that let non-technical teams configure 3D models dynamically, reducing developer dependency by 60%. [file:2]
- Led a monolith-to-micro-frontend migration using Webpack 5 Module Federation, improving deployment efficiency by 40% across 4 product teams.[file:2]
- Built a CLI framework for MFE scaffolding, port registration, and Docker containerization, accelerating onboarding velocity by 3x.[file:2]
- Optimized frontend performance through lazy loading, code splitting, and bundle-size reduction, improving Core Web Vitals by 25%. [file:2]

Casp AI — Senior Software Engineer (Contract)

Remote | July 2023–June 2024

- Developed a real-time AI assistant UI using React and Tailwind CSS, improving responsiveness through optimized state management.[file:2]
- Led Vite integration and build optimization efforts, reducing CI/CD build time by 40% and saving 100+ developer hours quarterly.[file:2]
- Refactored a legacy frontend codebase for modularity and performance, achieving 20% faster render performance across browsers and devices.[file:2]

- Designed a reusable component architecture that increased product velocity by 35% month over month.[file:2]
- Implemented a Jest test suite reaching 85% code coverage to improve production reliability.[file:2]

Hexagon Capability Center India — Software Engineer

Hyderabad, India | June 2022–July 2023

- Architected interactive React dashboards for engineering teams processing 10K+ data points, reducing render load time by 30%.[\[file:2\]](#)
- Collaborated with C# backend microservices teams on REST API integrations and resolved key UX/backend alignment issues.[\[file:2\]](#)
- Conducted code reviews and helped establish frontend testing standards, reducing production bugs by 20%.[\[file:2\]](#)
- Identified and fixed N+1 query issues in backend workflows, improving API response time by 40%.[\[file:2\]](#)
- Supported 50+ engineers with debugging help and technical documentation.[\[file:2\]](#)

Hexagon Capability Center India — Software Engineer Intern

Hyderabad, India | October 2021–June 2022

- Built a TensorFlow-based machine learning model for P&ID diagram detection in a computer vision use case.[\[file:2\]](#)
- Developed a web UI for model inference and result visualization.[\[file:2\]](#)
- Authored technical documentation for the model deployment pipeline.[\[file:2\]](#)

Selected Projects

Micro-Frontend Architecture Migration

- Modernized a legacy monolith into scalable micro-frontends using Webpack 5 Module Federation, improving code ownership across 4 product teams.[\[file:2\]](#)
- Designed CLI tooling for scaffolding, port registration, and deployment scripts, reducing setup time from 2 days to 15 minutes.[\[file:2\]](#)
- Implemented module-sharing strategies that reduced bundle size by 30% and supported zero-downtime rollout.[\[file:2\]](#)

3D Asset Interaction Dashboard

- Designed a Three.js-based 3D interface with JSON-driven configuration and smooth camera animations for internal enterprise workflows.[file:2]
- Reduced initial load time from 5 seconds to 1.2 seconds through lazy loading and LOD rendering.[file:2]
- Delivered Storybook-backed documentation and test coverage for maintainability.[file:2]

Personal Portfolio Web App

- Built a high-performance portfolio using Next.js 14, React, and Tailwind CSS with responsive UI and project filtering.[file:2]
- Optimized Lighthouse performance to 98 and implemented SEO enhancements including Open Graph tags and sitemap generation.[file:2]
- Deployed on Vercel with automated GitHub-based deployments.[file:2]

Education

Lovely Professional University (LPU) — Bachelor of Technology in Computer Science
Jalandhar, India | August 2018–July 2022.[file:2]

Relevant coursework: Data Structures, Algorithms, Database Design, OOP, Distributed Systems, Cloud Computing.[file:2]

Awards and Continuous Learning

- Runner-up, PRAGNYA Innovation Event — placed 2nd among 40+ teams and received ₹6000 for innovative UI design.[file:2]
- LeetCode Premium member with 180+ problems solved across medium and hard difficulty levels.[file:2]
- Ongoing study in system design, distributed systems, caching, database optimization, and cloud architecture.[file:2]
- AWS Certified Solutions Architect Associate listed as in progress with a June 2026 target in the provided resume.[file:2]

Notes for Versioning

This resume version updates the skills presentation and adds a current QAIG section in a conservative format. For a stronger QAIG-specific version, add exact details such as official title, start month, core projects, tech stack used at QAIG, measurable outcomes, and publications or demos if available.