

Ruben Marcus Luz Paschoarelli

Senior Product Engineer

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Senior Product Engineer with 13 years of experience building production software, distributed systems and AI-powered applications.

Over the last four years I've designed and built production AI systems including agent runtimes, multi-agent orchestration, Retrieval-Augmented Generation (RAG), tool-calling infrastructure, structured-output workflows, AI evaluation platforms and developer tooling.

My work spans LLM applications, context engineering, semantic retrieval, MCP, workflow orchestration, AI SDKs, benchmark-driven autonomous systems and production blockchain AI runtimes across NEAR, EVM, SUI, Solana and Cardano.

Core expertise includes agent orchestration, multi-model routing, tool calling, evaluation systems, prompt engineering, distributed systems and full-stack TypeScript development with Node.js, React and Next.js.

Quantum

Senior Product Engineer

Remote

Oct-2025 - Now

Led the AI engineering behind the #1-ranked ECDSA.fail by designing and operating an autonomous multi-agent research platform orchestrating specialist LLM agents across multiple providers, featuring model routing, evaluation pipelines, validation gates, automated benchmark submission and autonomous research workflows. Research contributor on the resulting publication.

Won #1 on Optimization Arena's Quantum Error Correction leaderboard by developing a near Bayes-optimal decoder through benchmark-driven optimization, multi-agent experimentation and anti-overfitting evaluation protocols.

Built production frontend applications for a post-quantum blockchain platform, including the browser wallet, blockchain explorer, documentation portals, developer tooling and the main web application using React, Next.js and TypeScript.

Created Ralph Starter, an open-source platform for autonomous coding, multi-agent orchestration and AI developer workflows, featuring MCP servers, isolated git worktrees, visual validation pipelines, multi-agent swarm execution and integrations with Claude Code, GitHub, Figma, Linear and Notion. (100+ daily npm downloads)

Created AEO.js, an open-source Answer Engine Optimization framework for AI-native search, implementing AI crawler discovery, robots policy analysis, LLM-ready website exports and AI search optimization. (100+ daily npm downloads)

Built Autoresearcher, an autonomous AI research platform implementing benchmark-driven optimization, multi-agent co-evolution, evaluation harnesses and iterative planning, execution and validation workflows.

Built Mirofi.sh, a one-click deployment platform that transforms an open-source multi-agent simulation engine into a production-ready hosted SaaS, providing authentication, cloud storage, deployment automation and operational tooling for autonomous AI workflows.

Bitte Protocol

Senior Product Engineer

Remote

Aug 2022 - Sep 2025

Built production AI runtime infrastructure powering multi-chain LLM applications, implementing streaming agent loops, OpenAPI-based tool calling, workflow orchestration and blockchain execution across NEAR, EVM, Sui and Cardano.

Developed AI agent infrastructure and SDKs including the @bitte-ai/chat embeddable component, OpenAPI function-calling manifests, deployment tooling and reusable APIs for production AI agents.

Designed and built production AI agents for Solana, Ethereum, Base, NEAR and Sui, enabling autonomous interaction with wallets, DEXs, lending protocols, launchpads and on-chain applications through custom tools and blockchain APIs.

Built production LLM workflow infrastructure featuring structured outputs, schema-validated workflow DAGs, JSON repair and retry strategies, confirmation-gated transactions, semantic retrieval (pgvector) and context-aware tool execution.

Contributed to the architecture of Bitte Wallet, implementing browser wallet features, blockchain integrations, AI-powered transaction workflows and developer-facing tooling across NEAR and EVM ecosystems.

Led frontend architecture across production AI applications, building scalable interfaces with React, Next.js, GraphQL and TypeScript, alongside CI/CD pipelines using GitHub Actions and Terraform.

Grover

Senior Fullstack Engineer

Lisbon, Portugal

Sep 2021- Jul 2022

Led the migration of Grover's homepage from a legacy React 16/Redux architecture to Next.js and React Query, improving performance, maintainability and developer experience while enabling faster product iteration.

Optimized application performance by migrating all static assets to WebP, reducing resource usage by more than 50% while preserving visual quality and improving page load times.

Designed and implemented A/B experiments, resolved production issues and contributed to user acquisition, conversion and revenue growth through continuous product optimization.

Zup Innovation

Lead Frontend Engineer

São Paulo

April 2019 - Aug 2021

Contributed to mission-critical financial platforms for Itaú and Santander, building secure, high-scale applications supporting millions of users across Open Banking initiatives.

Architected and built the Itaú Developer Portal using Strapi, Node.js and Next.js, improving developer experience, content management and platform maintainability.

Designed and implemented a micro-frontend architecture for StackSpot using Single-SPA and React, enabling independent deployments, team autonomy and application scalability.

Contributed to engineering excellence across a 60+ developer organization through code reviews, automated testing, CI/CD improvements and engineering best practices.

Freelancer

Software Engineer

March 2012 - March 2017

Delivered full-stack software solutions for Fortune 500 companies, enterprise organizations and high-growth startups across e-commerce, advertising, fintech and digital product sectors.

Partnered with global brands including Nike, Under Armour, Samsung, Panasonic, Monsanto, Itaú and Centauro, delivering production software tailored to business and technical requirements.

Designed and built a wide range of web applications, including e-commerce platforms, marketplaces, content management systems, internal dashboards, monitoring platforms and customer-facing web applications.

Architected and developed a scalable vehicle marketplace for Brazil's largest logistics company, creating an exclusive B2B buying and selling platform optimized for performance, maintainability and future growth.

FIAP

Information Systems

Associate

Jan 2020 - Jan 2022

Skills

Languages: TypeScript, JavaScript, Rust, Python, C#, PHP

AI: LLMs, AI Agents, Agentic AI, Multi-Agent Systems, Agent Runtimes, AI Infrastructure, AI SDKs, Context Engineering, Prompt Engineering, Tool Calling, Function Calling, Structured Outputs, Workflow Orchestration, Workflow DAGs, RAG, Semantic Retrieval, Vector Search, pgvector, Model Routing, Evaluation Harnesses, AI Evaluation, Benchmarking, MCP

Frontend: React, Next.js, Vue.js, Nuxt.js, Angular, Svelte, Astro, HTML5, CSS3, Tailwind CSS, Redux, Zustand, React Query, GraphQL, Micro Frontends, Single-SPA, Module Federation, Responsive Design, Accessibility

Backend: Node.js, Express, NestJS, Fastify, WebSockets, ASP.NET, Laravel, Symfony, REST APIs, GraphQL, OpenAPI, Microservices, Monolithic Architecture

Testing: Jest, Vitest, Cypress, Playwright, Selenium, Unit Testing, Integration Testing, End-to-End Testing

Cloud & DevOps: Docker, GitHub Actions, Terraform, AWS, Google Cloud Platform, Vercel, Cloudflare, CI/CD

Databases: PostgreSQL, MySQL, SQL Server, Oracle, MongoDB, Redis, pgvector

Blockchain: Ethereum, Solana, NEAR, Sui, Cardano, Base, viem, ethers.js, WalletConnect, wagmi, ERC-4337