

JOEL TAN

FULL-STACK SOFTWARE ENGINEER

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PROFIL

Full-stack software engineer and **AI enthusiast** with 6+ years of professional experience in Web and Mobile development. Strong specialization in **React**, **Next.js**, **TypeScript** and **Node.js**, strong proficiency in **SQL**, combined with hands-on experiences across backend services, data platforms, distributed systems, cloud infrastructure.

I have experience with B2C and B2B products across travel, banking, manufacturing, luxury, healthcare and automotive, including generative and agentic AI products, monitoring/alerting platforms, mobile applications, API (REST, tRPC, WebSocket and SSE), microservices and event-driven architectures.

Curious by nature with a product oriented mindset, I am also comfortable following technical problems from the frontend into backend, through data or infrastructure to reach more robust implementations. I enjoy collaborative technical discussions, pragmatic problem-solving and building products that are both pleasant to use and technically efficient, scalable & maintainable.

Comfortable with technical design, translating product needs into clear interfaces and architectures, and owning features end-to-end. Particularly interested in thoughtful product UX, product perceived performance, real-time systems, reliable distributed workflows and emerging patterns around AI agents.

EXPERIENCE

Iteru — Full-Stack Developer

January 2025 – September 2026

Lead full-stack developer among a "freelance collective". Working with various clients on web, mobile and AI-related product development as a full-stack developer/software engineer.

- Turn client requirements into technical specifications, interfaces and working applications.
- Build web and mobile products across frontend, backend and database layers.
- Develop REST, tRPC, WebSocket and Server-Sent Events APIs depending on product needs.
- Model and implement database data structures, stored procedures & indexes optimisations.
- Build and integrate generative and agentic AI features.
- Build and integrate various payment systems.
- Deploy applications across cloud and edge environments.

SELECTED PROJECT HIGHLIGHTS:

IteruCode — AI App Builder Platform

FULL-STACK DEVELOPER | Paris, France · March 2026 – September 2026

Led architecture and end-to-end development of an AI platform turning natural-language prompts into editable, executable and deployable full-stack applications. Owned frontend/product architecture, agent runtime & safety, real-time AI, sandbox/distributed systems, persistence, billing and deployment — available at iterucode.ai.

- Performance-focused Next.js & React frontend development with SSR/prerendering, streaming/Suspense, client-side & server-side caching, virtualization, web workers, server-side optimized French/English internationalization.
- Real-time and type-safe backend development with Convex, heavy usage of Convex's durable Actions for long-running/parallel work, as well as for periodic and scheduled jobs.
- Type-safe API development with oRPC and REST endpoint with Next.js for webhooks and various integration callbacks (Stripe, Vercel For Platform, Convex For Platform), with authentication handle via betterAuth/Convex and API contract/schema validations with Zod.

- Setted up automatised unit and integrations tests with Vitest and Playwright and end-to-end critical userflow verifications (project creations, deployments, billing, etc...).
- Developed a multimodal & multi-provider AI routing through Vercel AI Gateway and optional user-selected OpenCode Go, with immutable per-run model source, encrypted personal credentials and code/image/video generation.
- Implemented persistent AI agent runtime, tools & safety with custom context management and capability-scoped for file/diff, bounded terminal command, web/browser usage, env variable managements, diagnostics and review capabilities and deployment tools, with bounded I/O/timeouts, guarded mutations and secret redaction.
- Real-time server-side AI execution & streaming through Convex Agent & Actions, with deltas/tool activity persisted to durable threads and delivering them via Convex's reactive query WebSocket subscriptions.
- Implemented durable workspace persistence & recovery via sandbox-as-source-of-truth plus pre/post-AI response, editor writes, suspend and deploy snapshots, persisted snapshot records in Convex, with snapshot tarball stored and retrievable from AWS S3 for resume, recovery and version history.
- Developed a resilient distributed orchestration across Vercel Sandboxes and Convex using reservation/runtime leases, with heartbeats, deadlines, cancellation, state machines and reconciliation jobs setted up with idempotency in mind to ensure traceability and reliability of each runs, actions, jobs & fallbacks.
- Built a deployment system for user generated applications & backends via Vercel for Platform and Convex Platform APIs, with frontend/custom-domain deployment and project-scoped backend provisioning/connect/deploy, environment sync, lifecycle tracking and recovery/rollback states.
- Implemented sharing & access control with real-time collaboration, role-based memberships (RBAC), permission-aware member management, hashed expiring/revocable invitations and ownership transfer.
- Built a usage-based Stripe billing with an immutable/append-only credit ledger, with atomic reserve/debit/release, per-generation AI usage & cost reconciliation, idempotent checkout webhooks and code-driven Stripe catalog sync for better traceability/versioning and developer experience.

Technology: Bun · Next.js · React · TypeScript · TailwindCSS · shadcn/ui · Motion (Framer Motion) · Convex · Convex Agent · Better Auth · oRPC · Vercel AI SDK · Vercel AI Gateway · OpenCode SDK · Vercel Sandbox · Monaco Editor · Shiki · Zustand · TanStack React Virtual · next-intl · Zod · AWS S3 · SST · Stripe · Vitest · convex-test · Playwright

Itinego / Road Iceland — Cross-Platform Travel Planner

FULL-STACK DEVELOPER | Paris, France · April 2025 – February 2026

Led architecture and end-to-end delivery of a two-brand B2C travel planner for a 65,000+ member community across Web, iOS and Android, spanning planner UX, shared APIs/data, agentic AI, offline/realtime mobile, mapping, permissions, monetization and multi-brand releases.

- Cross-platform product architecture using Turborepo, Bun, Next.js/React and React Native/Expo, with shared TypeScript packages for services, API contracts, business logic, i18n and brand-specific static configs/datas for aligned releases on all platforms (Web, iOS and Android).
- Setup and management of the Supabase/PostgreSQL database, type-safe query handled through Drizzle ORM, setup of various triggers and stored functions for some generic cases.
- Developed fully type-safe backend with tRPC APIs, with proper auth handling logic via Supabase's SDK, schema validation via Zod and cache invalidation
- Implemented Agentic AI with Vercel AI SDK and Vercel AI Gateway, with authenticated multi-step tools for all currently available planner features.
- Built an offline-first React Native architecture by implementing a resilient "in-memory" automatic storage layer with MMKV on both TanStack React Query caches and some selected Zustand stores.
- Implemented offline fallback mechanism, with automatic network refresh, timeouts detections, automatic authentication refresh and automatic Supabase reconnections after suspensions and network changes.
- Developed the planner UX & interaction engineering across DAILY/MACRO modes, map-integrated drag-and-drop, multi-day destinations, notes, bookings and budgets, with normalized day assignment/global ordering/map-marker ordering through item/day moves and multi-day changes.
- Implemented performance-focused planner interactions & state synchronization via optimistic UI, batched persistence, cache invalidation, requestAnimationFrame-throttled drag-over updates and touch/mouse-specific activation.

- Implemented a map-driven frontend & generic runtime provider abstraction across Web/mobile, with itinerary-synchronized marker ordering, Google Maps, Mapbox and MapLibre/MapTiler generic implementations, and Supabase Realtime feature flags for provider switching without redeploy, nor refresh necessary.
- Implemented itineraries access control by roles (RBAC) with proper cached permission invalidation.
- Implemented monetization with subscription handling via Stripe for web & RevenueCat for iOS/Android.

Technology: Bun · Next.js · React · React Native · Expo · EAS · TypeScript · TailwindCSS · NativeWind · shadcn/ui · TanStack React Query · Zustand · tRPC · Zod · Drizzle ORM · PostgreSQL · Supabase · Supabase Realtime · Vercel AI SDK · Vercel AI Gateway · Mapbox · MapLibre · MapTiler · MMKV · Stripe · RevenueCat

Advanced Schema — Full-Stack Developer

Paris, France · Jan 2020 – Jan 2025

Spent five years working on production software for clients across banking, manufacturing, luxury, healthcare and automotive.

- Developed enterprise applications & software, including B2C, B2B products and monitoring/alerting dashboards.
- Built frontend and backend features across a range of production applications.
- Designed real-time APIs using REST, WebSocket and Server-Sent Events.
- Worked on real-time data pipelines for manufacturing operations and banking transactions using Apache/Confluent Kafka, Apache Spark and Apache Flink.
- Built data-processing and ingestion workflows across PostgreSQL, MariaDB, Oracle, Teradata and Elasticsearch.
- Contributed to database architectures, queries and indexes optimization
- Added unit and integration tests to improve application reliability and make changes safer to ship.
- Contributed to projects for **Louis Vuitton**, **BNP Paribas**, **Renault Group**, **Galderma**, **Mondial Pare-Brise** and **AD Carrosserie**.

SELECTED PROJECT HIGHLIGHTS: (top 4 out of ~8 similar projects)

BNP Paribas — BMSA Monext & Legacy

FULL-STACK DEVELOPER, FRONTEND LEAD & TECHNICAL REFERENT | Paris, France · September 2022 – January 2025

Developed a transaction-monitoring and alerting platform used to identify payment issues, investigate affected transactions, and support root-cause analysis.

- Frontend architecture & delivery leadership using Angular, building the Monext alerting frontend from scratch across core interfaces, backend/data synchronization and production releases.
- Implemented transaction-monitoring & investigation UX presenting alerts and supporting transaction data for payment-issue analysis and root-cause investigation.
- Cross-functional frontend technical leadership coordinating product, design, backend, data, DevOps and client decisions/delivery.
- Developer mentoring & release support across planning, implementation reviews, issue resolution and release activities.
- Stream-processing backup contribution across Apache Flink/Kafka, developing, debugging and releasing selected transaction-pipeline features.
- Managed on-premise deployments via Ansible Tower, managed deployment scripts & kubernetes configurations.

Technology: Angular · Spring Boot · Elasticsearch · Oracle · Apache Flink · Apache Kafka · Ansible (Tower) · Kubernetes · Docker · Node.js · Typescript · Java · SQL · Python · Shell

Louis Vuitton — MANUF 2020

FULL-STACK DEVELOPER | Paris, France · January 2020 – September 2022

Developed and expanded a real-time monitoring and alerting platform used to track manufacturing activity across Louis Vuitton factories.

- Broad full-stack & streaming-data ownership across Angular, Node.js/Express, Kafka, Spark/Scala and MariaDB.
- Event-driven architecture (pub/sub) with SAP, Kafka & Spark.
- Worked on some Spark jobs and monitoring to optimise data mapping and persistence to MariaDB.
- Developed SSE API endpoints with Express.js to consume Spark's outputs, with data aggregation by batches for some data stream before streaming the aggregations to the frontend via SSE as well.
- Real-time monitoring & alerting workflows spanning UI, APIs, stream processing, data ingestion and persistence.
- Developed end-to-end data injection & test tooling with Shell and Go scripts.

- Enhanced performance, scalability & data-quality hardening across real-time workloads, legacy-system constraints and a growing deployment footprint.
- Continental deployment expansion support as the platform scaled from France to Europe and manufacturing sites continent wide.

Technology: Angular · Node.js · Express.js · RxJS · Apache Kafka · Apache Spark (Scala) · MariaDB · Shell · Go · Azure Cloud · Jenkins

Renault Group — READY

FULL-STACK DEVELOPER | Paris, France · September 2020 – November 2021

Developed a commercial-performance monitoring dashboard used to track sales, gross revenue, and related indicators across Renault Group brands.

- Commercial analytics frontend development in Angular for presenting and exploring sales, gross-revenue and KPIs.
- Backend query & transformation layer for retrieving, shaping and exposing dashboard data.
- Real-time data-access architecture with Nodata Bridge custom query logic and live-update support.
- PostgreSQL-backed data integration for commercial reporting sources.
- Cross-functional reporting delivery with design, data and client stakeholders to refine requirements and ship dashboard features.

Technology: Angular · Nodata Bridge · Java · PostgreSQL

Mondial Pare-Brise & AD Carrosserie — B2C Web App

FULL-STACK DEVELOPER | Paris, France · May 2021 – September 2021

Developed planning and scheduling features for the Mondial Pare-Brise and AD Carrosserie B2C web applications.

- Implemented full-stack scheduling workflows with Angular frontend planning features and Spring Boot APIs.
- Database-backed scheduling logic using PostgreSQL complex queries and stored functions.
- Cross-functional delivery with product, design, data and DevOps stakeholders through implementation and release.

Technology: Angular · Spring Boot · Java · PostgreSQL

PIMAN 2.0 — Full-Stack Developer

Paris, France · Sep 2018 – Oct 2019

Professional Internship in a consulting IT Company as a full-stack developer.

- Worked on internal applications across web, mobile and desktop.
- Developed clients applications across web, mobile and desktop.
- Built and worked on REST and WebSocket APIs.
- Worked on MySQL database architecture.
- Contributed to projects for clients including **LVMH**, **RSM** and **Agexial**.

Technology: Angular · Ionic · Vue.js · NodeJS · Laravel · MySQL

TECHNICAL SKILLS

Frontend	React · Next.js · React Native · Vue · Nuxt · Angular · TypeScript · JavaScript
Frontend & Product Engineering	React Server Components · SSR / Prerendering · Streaming / Suspense · Cache Components · Function Caching · Virtualization · Web Workers · Internationalization · React Query · Zustand · Figma · Vitest · Playwright · Storybook
Backend & APIs	Node.js · Convex · Supabase · Nest.js · Express · Fastify · Hono · tRPC · oRPC · WebSocket · REST · Server-Sent Events · Prisma · Drizzle ORM
AI Products	OpenAI API · Vercel AI SDK / Gateway · IA generative & agentic · APIs de modèles multimodaux · RAG · Tools · Embeddings / PgVector · FAL.ai · ComfyUI (UI ; headless/API explored)
Data	PostgreSQL · Supabase · MySQL · MariaDB · MongoDB · Elasticsearch · Convex · PgVector
Systems & Infrastructure	Vercel · Docker · Kubernetes · Kafka · Spark · Flink · Convex Actions / durable jobs · AWS S3 · Cloudflare R2 · Azure Cloud (exposition) · GCP · queues · event-driven · CI/CD (Jenkins) · Monitoring/Alerting
Other	Python — basic working knowledge, active upskilling · Shell/Bash · Go scripting · Git

EDUCATION

- **EPITECH — Master of Science – Technological Innovation**
2020 – 2022 · Paris, France
Software Architecture · Specialization in IoT (Internet of Things)
- **EPITECH — Bachelor / RNCP Level 6 – Information Technologies**
2019 – 2020 · Paris, France
Web & Mobile Project Management
- **Samsung Campus — Licence / RNCP Level 5 – Information Technologies**
2017 – 2019 · Paris / Saint-Ouen, France
Web & Mobile Development
- **ESIEE Paris — Engineering Programme – Integrated Preparatory Classes**
2015 – 2017 · Noisy-le-Grand, France
General engineering preparatory classes

LANGUAGES

French — Native
English — C1 Advanced & dual FR-US citizenship

INTERESTS

Sport · Martial Arts · Science · Engineering · AI · Travel · Gaming