Mustafa Dualeh

Software Engineer · Full-Stack and Android

Asia-Pacific (UTC+8) · Remote contract, freelance or part-time
Available now, up to 25 hours a week. Remote first; available to travel for short on-site periods.
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SUMMARY

Canadian software engineer with over a decade in software, eight years of it shipping Android and web products in Japan (2017–2025). Shipped Android apps at Nissan and Astool, and full-stack Kotlin/Spring Boot and React applications at Daimler Trucks Asia. Since March 2026 I have been the founder and technical lead of Tinkr, a pre-launch 3D-printing platform. I designed its payments, data and service architecture and delivered it with AI coding agents under explicit review, testing and decision-record rules. Strongest in product-minded backend and full-stack work: payment flows, transactional data models, third-party integrations and pragmatic AI features.

TECHNICAL SKILLS

- **Languages:** TypeScript, JavaScript, Kotlin, Java, SQL (PostgreSQL, PL/pgSQL, PL/SQL), Dart
- **Frontend:** React 19, Vite, CSS design systems, three.js, WebAssembly, i18n including right-to-left (Arabic), Playwright
- **Backend:** Hono, Node.js, Spring Boot, REST and OpenAPI 3.1, webhooks, transactional outbox, idempotency, rate limiting
- **Cloud and data:** Cloudflare Workers, Pages, Queues, Durable Objects; Supabase (Postgres, Auth, Storage, RLS); GCP Cloud Run Jobs; Docker
- **Payments:** Stripe Checkout, PaymentIntents (manual capture), refunds, coupons, Stripe Identity; Wise batch payouts
- **AI:** Claude API (vision, JSON-schema structured output), image-to-3D APIs; agentic development with Claude Code and OpenAI Codex
- **Mobile:** Android (Kotlin, Jetpack, Compose, Room, Hilt, coroutines, MVVM/MVP, CameraX), TensorFlow Lite, ML Kit, Flutter
- **Quality and delivery:** Vitest, Testing Library, Playwright, GitHub Actions, Husky, Sentry, structured logging, backup runbooks

EXPERIENCE

Founder & Technical Lead, Tinkr

Tinkr App Ltd (UK) · Remote · Mar 2026 – Present · Case study: mustafadualeh.com/work/tinkr

Tinkr turns 3D models and drawings into prints made by independent providers in the customer's country. **Status:** pre-launch and in private beta; not publicly launched and without customers yet. Full technical case study available on request.

- **Leadership:** defined the product, a 20-week API plan and 90+ architecture decision records, and led a re-platforming from a Next.js prototype to an API-first architecture. Directed AI coding agents under written rules: Codex built the early API, then Claude Code implemented and OpenAI Codex reviewed. No agent approved its own work, and I approved every merge after a second agent's review and CI.
- **Payments:** designed merchant-of-record Stripe Checkout created only from locked quotes. Every webhook is re-checked against Stripe before an order changes, with a recovery path if one never arrives. Delayed capture, refunds and coupons; money stored as integers with an explicit currency.
- **Payouts:** specified provider payouts as admin-approved batches (in trial), built so a retry can never pay a provider twice, plus provider identity verification.
- **Backend:** specified an API of about 530 routes on Cloudflare Workers (Hono) with audience-filtered OpenAPI documentation. Every state change is one locked Postgres transaction, side effects run through retrying background workers, and every write is idempotent. 425 forward-only migrations with row-level security.
- **3D pipeline:** specified direct-to-storage uploads, cloud slicing on GCP Cloud Run, automatic quotes from slice data and provider rate cards, and matching to local providers with time-boxed offers.
- **AI:** specified upload screening with a vision model and image-to-3D generation with a fallback provider; both fail safe and stay inside a daily spend limit. An LLM design assistant whose edits are validated before they apply.

- **Front ends:** directed a provider, partner and admin console, two consumer apps and a hosted checkout, all React on Cloudflare Pages, with API keys kept server-side. In-browser CAD (WebAssembly) exporting 3MF and STL. Localized, including right-to-left Arabic.
- **Delivery:** set the delivery rules: by the end, every behaviour change needed a test that failed first, CI gated every promotion to development and production, and database deploys were guarded. Nightly backups and 1,250+ automated test files.

Android Engineer, Nissan Motor Corporation

Tokyo, Japan · Feb 2020 – Oct 2025

- Researched and built a camera-based Digital Driver's Guide prototype using TensorFlow Lite transfer learning, ML Kit and CameraX.
- Shipped Nissan Connect Android features and built against the Android Automotive Car SDK.
- Introduced unit testing to the Nissan Connect Android codebase (Jetpack, coroutines, modular MVVM).
- Presented a sample application and an assessment of Kotlin/Native to the team. Contributed to the consolidated Nissan Connect Flutter application.

Full-Stack Developer, Daimler Trucks Asia (Mitsubishi FUSO)

Kawasaki, Japan · Jun 2018 – Jan 2020

- Built a quiz application from scratch (Kotlin/Spring Boot and React) and a truck-driver tracking application (Kotlin/Spring Boot and JavaScript).
- Built the web front end for a bus-tracking proof of concept that went on to serve internal shuttle-bus users and clients.
- Designed and taught a three-month "Intro to Programming" course in Kotlin for non-developers.

Lead Android Engineer, Astool Inc.

Tokyo, Japan · Jul 2017 – May 2018

- Sole Android developer of the Smooz mobile browser: 100,000 downloads and a 4.5-star rating within its first three months.
- MVP architecture. Started in Java and migrated the codebase to Kotlin in November 2017. Set up the structure for part-time developers to continue the work.

Earlier experience

Toronto and Tokyo · 2013 – 2017

- Systems engineering, database administration and IT support at Computec Japan. Web development and PL/SQL reporting scripts at York University while studying.

EDUCATION

B.A. Computer Science, minor in Japanese Language, York University, Toronto, 2015
Mechanical Engineering coursework, Ryerson University, Toronto, 2008–2011

Languages: English; Japanese (conversational)