GUSTAV LOTZ



Senior Software Engineer

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PROFILE

Full stack engineer with 6+ years of building and testing production SaaS platforms for companies in Europe, the UK and South Africa. A large part of my recent work has been quality engineering: writing the Playwright and Vitest suites, building the CI and pre-commit gates that keep them meaningful, and tracking down the bugs that only appear end to end, such as a booking API that returned HTTP 200 for a request it had silently failed to process.

Because I work across the whole stack, from React, Angular and Nuxt frontends to Node.js APIs, Postgres and Redis, I test the system rather than only the screen: API contracts, authentication boundaries, payment races and data migrations as well as user journeys. I'm looking for a remote, part-time Full Stack QA Engineer role.

QA AND ENGINEERING SKILLS

Test automation: Playwright (end-to-end, API testing through request contexts, sharded runs), Vitest, React Testing Library, Jest, Karma and Jasmine, v8 coverage

Test strategy: Risk-based regression suites, mocked and real-backend E2E suites, test-first refactoring, flaky test triage and quarantine, converting manual test case baselines into automated flows

CI and quality gates: GitHub Actions (tiered, sharded and path-filtered pipelines), Jenkins, Husky and custom git hooks, lint-staged, commitlint, changed-line coverage ratchets, jscpd duplication checks

Static analysis: SonarQube and SonarCloud quality gates, eslint-plugin-sonarjs, custom ESLint rules with their own tests

API and security testing: Playwright API tests, Postman, authentication boundary tests (401 and 403 cases, forged cookies, tampered signatures), CSP, CSRF, CORS and frame-ancestors checks, payment idempotency and race-condition tests

Accessibility: Label and role assertions in component tests, accessibility tests for embeddable widgets, basic automated accessibility checks in E2E flows

Bug reporting: Jira, Sentry, reproducible bug reports with full request and response details

Engineering stack: TypeScript, React 19, Next.js, Nuxt 4 and Vue, Angular 19, Ionic and Capacitor, Node.js and Express, PostgreSQL and Supabase, Redis, Docker, Kubernetes

PROFESSIONAL EXPERIENCE

Software Developer | Travelstart — Apr 2026 – Present

Cape Town, South Africa

- Rewrote Travelstart's single-brand Angular B2C site as a multi-tenant Nuxt 4 platform, then focused on hardening the booking, payment and authentication flows around it.
- Wrote most of the platform's automated tests: around 410 Vitest unit and server API-handler test files and 95 Playwright end-to-end specs.
- Built the pre-commit gate: lint, typed lint on staged files, unit tests, a production build and a duplication check, plus a changed-line coverage ratchet that blocks commits below 80% to match the SonarCloud new-code gate.
- Replaced a flaky repository-wide duplication baseline in that hook, which gave different answers depending on the size of the codebase, with two narrower checks that are stable from run to run.
- Tested the payment checkout against its failure modes: 409 responses when a flow is already finalized (double-charge races), cached sessions for idempotent retries, 422 responses for missing fields, untrusted gateway callback parameters and postMessage with an explicit target origin.
- Paid end to end with real test cards and traced a booking stuck on Pending to the booking API accepting a payload it could not map, nulling every field and still returning HTTP 200 with a SUCCESSFUL status. Documented it with full request details for the API team.

- Wrote security tests for CSP, CSRF, frame-ancestors, CORS and authentication boundaries, including Playwright API tests for the tenant admin login: forged cookies return 401, tampered signatures are rejected and per-tenant roles return 403.
- Built a tool that groups SonarQube findings by rule and files them as Jira tickets with duplicate detection, turning 572 issues into 70 actionable tickets.
- Worked within a three-tier GitHub Actions pipeline (lint and unit tests with coverage and SonarCloud, an E2E build, then sharded E2E runs against a real Redis instance), where unstable tests are tagged and kept out of blocking runs until they are ready.
- Built a sandbox monorepo of reference host apps (web, Capacitor and Ionic, React Native, Flutter) for testing the white-label site embedded in partner apps through WebViews and iframes, with bridge mocks, an offline JWT auth stub and cross-origin cookie and CORS verification.

Stack: Nuxt 4 · Vue 3 · TypeScript · Node.js · Redis · Vitest · Playwright · Capacitor · React Native · Flutter · GitHub Actions · SonarCloud · Sentry · Jira

Software Developer (Frontend / Full Stack), Contract | KlantenVertellen / Kiyoh — Jun 2024 – Oct 2026
Netherlands (Remote)

- Led the migration of 144+ server-side FreeMarker templates into a React micro-frontend architecture, so review pages and widgets could be released independently of the Java backend.
- Delivered an embeddable review widget platform with 100+ industry variants, plus an internal QA console that renders new and legacy widgets side by side to confirm visual parity before cutover.
- Wrote most of the test suite for the four-portal Nx monorepo: about 470 Vitest and React Testing Library files and 150 Playwright specs, split into a mocked-backend suite and a suite that runs against a real backend.
- Built the GitHub Actions pipeline: a fast lint stage, a required lint, test and build check, and path-filtered E2E plans for both the mocked and the real-backend suites.
- Built the Husky pre-commit gate (lint, typed lint for source and E2E code, stylelint, the full Vitest run, an 80% coverage ratchet, build and duplication check) and commitlint rules that require a ticket key on every commit.
- Wrote custom ESLint rules, each with its own tests, for problems SonarQube kept reporting: aggregate cognitive complexity, commented-out code and duplicate event handlers.
- Analysed 1,086 SonarQube issues across 55 rules, and fixed the 31 functions flagged for cognitive complexity before switching that rule on for the whole repository.
- Designed a black-box Playwright explorer that tests a site from the outside through per-site configuration: checkpointed steps, broken link, console error and form checks, a selector fallback chain, PII redaction of captured logs and a redirect allowlist.
- Used it to record 329 of a 336-case manual Excel regression baseline as Playwright flows, and traced mass failures under parallel runs (325 of 329 failing at 9 workers) to backend saturation rather than test defects.
- Benchmarked 15 AI-assisted test authoring setups using Playwright MCP to see where AI help was reliable enough to adopt.
- Built drag-and-drop data tables with optimistic updates, i18n with dynamic label loading, and role-based navigation across the Admin, Business Owner, Group Manager and Platform Admin portals.

Stack: React 19 · TypeScript · Nx · Vite · Redux Toolkit · Vitest · React Testing Library · Jest · Playwright · GitHub Actions · Jenkins · Docker · Kubernetes · SonarQube

Software Developer (Full Stack), Sole Developer | JL Consulting Engineers (Margus) — Dec 2025 – Present
South Africa (Remote)

- Replaced an Excel-based workflow with a real-time React and Supabase platform covering quoting, pipeline and WIP tracking, invoicing, directories and Xero accounting integration.
- Built and maintain more than 2,500 Vitest unit and integration tests and 28 Playwright specs that run against a real Supabase backend and a Xero demo company.
- Enforced coverage thresholds of 80% for lines, functions and statements and 78% for branches, with an 80% ratchet on new code and a targeted E2E subset in the pre-commit hook.
- Ran the first full E2E pass before a UI redesign and worked through 42 failures across about 10 specs. Most were stale selectors; one exposed an Edit Project feature that had silently stopped working.

- Found and fixed an AG Grid native-event bug that opened a drawer underneath a modal, and form fields that were missing label associations.
- Built an Excel-to-Postgres migration pipeline (ExcelJS and Zod) that validates data and preserves relationships across 8 tables, and integrated Xero through OAuth 2.0 and HMAC-verified webhooks.
- Introduced SonarQube Cloud and eslint-plugin-sonarjs as a ratchet, enforced on files as they are touched so new code meets the bar immediately.

Stack: React 19 · TypeScript · Vite · Supabase · PostgreSQL · AG Grid · Xero API · Vitest · Playwright · SonarQube Cloud · GitHub Actions

Software Developer (Full Stack) / Tech Lead | CFOHIRE May 2025 – Mar 2026

United Kingdom (Remote)

- Built a B2B marketplace from the ground up, connecting companies with CFOs and finance specialists across job posts, proposals, contracts, invoicing and payments in one workspace.
- Served three user types (clients, CFOs and finance associates) from shared product flows with role-based access.
- Automated the payment lifecycle with Stripe Connect: invoice generation, scheduled payments and electronic signing.
- Set up the monorepo, CI/CD pipelines, shared libraries and separate staging and production environments.
- Built secure real-time messaging so proposals and conversations stay in sync across users.

Stack: Next.js · React · TypeScript · Node.js · Express · PostgreSQL (Supabase) · Stripe Connect · Docker · CI/CD · SendGrid · Gemini

Software Developer (Full Stack / Mobile) | TelematicsAI, via KRE8IT Programming Dec 2020 – Mar 2026

Somerset West, South Africa

Fleet management platform providing real-time vehicle tracking, live video, emergency response and driver analytics for commercial fleet operators.

- Built multi-protocol live video streaming (FLV, HLS, H5F) with protocol detection, automatic fallback and reconnection handling.
- Engineered failover between Firebase Realtime Database and a REST API, with dual-server fallback, so the app kept working on poor connections.
- Shipped a cross-platform app for Android, iOS and PWA through Capacitor, with about 95 Karma and Jasmine spec files and coverage reporting, and tested on real devices to catch platform behaviour that emulators missed.
- Implemented AES-256 encrypted credential autofill with device fingerprinting, migrating existing users from unencrypted storage.
- Built a GPS panic and theft alert system with location caching and dual-server dispatch, so alerts still go out during connectivity failures.
- Delivered fleet analytics dashboards with risk scoring and driver behaviour metrics.

Stack: Angular 19 · Ionic 8 · Capacitor · NgRx · RxJS · TypeScript · Firebase · Node.js · Express · MongoDB · Karma · Jasmine

Junior Software Developer (Full Stack) | LemonKode Jun 2019 – Jul 2020

Somerset West, South Africa

- Led the migration of an existing database from Apache CouchDB to MongoDB with Mongoose.
- Built secure RESTful APIs on Node.js and Express for a multi-tenant MEAN stack application.
- Replaced a manual accounting process with automated financial PDF report generation.
- Optimised rendering on a large warehouse application in Zimbabwe to handle 400,000+ products.
- Built Python and PowerShell services that connected the payslip system to internal printing.

Stack: AngularJS · Node.js · Express · MongoDB · Mongoose · CouchDB · Python · PowerShell

IT Support Technician | Trulogic Financial Services Aug 2018 – Jun 2019

Cape Town, South Africa

- Managed infrastructure security across firewalls, intrusion detection, antivirus, encryption and access control policies.
- Wrote the disaster recovery and business continuity plan, including cold storage and daily backup procedures.

SELECTED WRITING ON TESTING AND QUALITY

Articles from my blog, based on the projects above.

- Unit Tests, E2E Tests, and CI: Different Safety Nets for Different Failures
- Pre-Commit Hooks: Catching Problems Before They Ever Reach CI
- Building an E2E Explorer That Doesn't Know Your Codebase
- Refactoring Without Breaking Everything: Why Tests Come Before the Refactor
- Hardening a Payment Checkout: Trust Boundaries, Races, and a Gateway That Lied
- Finding Problems at Scale: What 1,086 SonarQube Issues Actually Told Me

EDUCATION

BSc Mathematics and Computer Science | University of South Africa (UNISA) 2020 – 2024

Programming, data structures, operating systems, artificial intelligence, linear algebra, calculus, real analysis.

Engineering Studies | Cape Town School of Engineering, Somerset West Feb 2016 – Jun 2017

Programming, Cisco networking, electronics, mechanical, PLCs, SOLIDWORKS 3D CAD.

LANGUAGES

English (fluent), Afrikaans (native), German (A1)

REFERENCE

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