Alejandro Aguirre Luna

Senior Software Engineer · Java / Spring Boot · TypeScript / Node.js · AI Engineering

Netherlands & Global (Remote-First)

Open to senior software and AI engineering engagements: freelance, NL (hybrid) and remote.

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PROFESSIONAL SUMMARY

Senior software engineer with 15+ years in software: backend systems in Java and Spring Boot, full-stack products in TypeScript and Node.js, and LLM features built with tests, evals and cost limits.

I started as a Java developer in 2011 and spent ten years in hands-on engineering roles: enterprise web applications in Java EE, Spring and Hibernate for North American clients (ON24, Globant), then Java 11 and Spring Boot microservices on Kubernetes for the Backbase digital banking platform.

In 2026 I designed, built and now run my own products end to end in TypeScript: Next.js and React on Vercel, PostgreSQL, Stripe payments and webhooks, background workers, OAuth login and LLM integrations. Interview Audio Pack and Kinotela each have more than 1,000 automated tests (Vitest and Playwright) running in CI. Most recently I shipped Bouwarchief AI, a Python and FastAPI service on AWS Lambda, written in CDK, with retrieval-augmented answers and a fine-tuned vision model (demo on request).

I build with AI coding agents (Claude Code, GitHub Copilot) under a clear architecture, my own review of every pull request and a test suite that has to pass. I also build tooling around those agents: ArkTS Agent Lab measured, on six coding models, what makes an agent write correct code in ArkTS, the HarmonyOS language, with a judge built on the compiler and the official linter: the checker's errors fed back to the model helped most.

I am an agile engineer in practice. I worked in Scrum teams throughout my developer career, then led agile ways of working myself: Scrum Master (PSM II) of a CI/CD team and Release Train Engineer (SAFe) for a 10+ team release train. I know Scrum, Kanban and SAFe from both sides, so I help a team with refinement, slicing, flow and cross-team dependencies, not only with code.

Bilingual English/Spanish. Based in the Netherlands.

CORE CAPABILITIES

- ▸ Backend Engineering: Java, Spring Boot, Spring, JPA / Hibernate
- ▸ REST API & Microservices Design
- ▸ Full-Stack TypeScript: Node.js, Next.js, React
- ▸ Relational Data: PostgreSQL, Oracle, SQL & PL/SQL
- ▸ Automated Testing: JUnit, TDD / BDD, Vitest, Playwright
- ▸ Design Patterns, Clean Code & Code Review
- ▸ Payments & Integrations: Stripe, OAuth 2.0, Microsoft Graph
- ▸ Docker, Kubernetes (CKAD), CI/CD (GitHub Actions, Jenkins)
- ▸ LLM Integration, AI-Assisted Development & Tooling for Coding Agents
- ▸ Agile Delivery: Scrum (PSM II), Kanban, SAFe (as Release Train Engineer)

SELECTED PRODUCTS & PROJECTS

Interview Audio Pack (live product)

Full-Stack TypeScript · Payments · LLM pipeline

Own product · live since Oct 2026

- Paid service: Stripe Checkout and webhooks, intake, an automated pipeline (Claude scripts, ElevenLabs voices, PDF) and one human approval gate the system enforces
- Durable worker and email outbox, so a dropped connection never loses a payment or a delivery
- About 1,200 automated tests (unit, integration with an in-memory PostgreSQL, Playwright end to end)

Bouwarchief AI (live on AWS, demo on request)

Python · FastAPI · AWS Serverless · RAG

Own product · private repo

- Answers questions about a real Dutch building archive (287 scanned PDFs, 339 pages, many handwritten, no text layer) in Dutch, English or Spanish, citing the PDF page; refuses when the archive does not say
- FastAPI service and a static UI with a zoomable page viewer, run as one container on AWS Lambda behind a function URL and a passphrase login, defined in AWS CDK with a budget alarm
- RAG with reranking and Claude on Amazon Bedrock, plus a vision transformer I fine-tuned on a GPU and serve with ONNX Runtime (macro F1 0.90 against a 0.83 baseline); pytest suite that runs fully offline

ArkTS Agent Lab: what makes coding agents write correct ArkTS

Developer Tooling · Coding Agents · LLM Evals

Own R&D · public repo · TypeScript, Node.js · github.com/alejandrolunatech/arkts-agent-lab

- Evaluated six coding models on 40 tasks in ArkTS, the HarmonyOS language that looks like TypeScript and is stricter, under five conditions (1,200 attempts). Feeding the checker's errors back to the model raised the tasks passed from 118 to 159 of 240; a one-page rule sheet or API lookup given once changed little
- A judge that needs no model and no device: the OpenHarmony fork of the TypeScript compiler for syntax and types against the HarmonyOS SDK declarations, the official ArkTS linter, hidden behaviour tests in a locked-down process and structure facts read from the syntax tree
- The same checker runs as a language server (LSP), as an MCP server for agents and inside an IntelliJ plugin prototype; each task is proven by a reference solution that passes and a plausible TypeScript-style answer that must fail; built with AI coding agents under my design and review

Kinotela brand video studio (in progress)

Monorepo · Next.js · PostgreSQL · Rendering

Own product · private repo

- Deterministic compiler turns a short brief into a video spec in a project's brand; paid model calls only after a price is approved
- Database-enforced project isolation, append-only cost ledger, immutable spec history
- About 1,400 automated tests and pixel-parity checks of the rendering engine in CI

Public engineering repos: modern Java and TypeScript

Java 21 · Spring Boot 4 · TypeScript

Own work · public on GitHub · github.com/alejandrolunatech

- modern-java-design-patterns: GoF patterns rewritten with records, sealed types and pattern matching, plus the patterns that keep an LLM in check (a port, decorators, guardrails, a circuit breaker); architecture rules enforced by tests
- payment-disputes-spring-boot: a dispute service in Spring Boot 4 and Java 21 with hexagonal layers, idempotency keys, optimistic locking and integration tests on a real PostgreSQL; a model proposes a reason and tested code decides
- invoice-intake-api: Node.js, strict TypeScript, Express 5 and PostgreSQL; a model extracts invoice fields and code verifies every one (IBAN and VAT checksums, totals in integer cents)
- Written with AI coding agents under my design and review, with CI on every pull request

AI Engineering Labs & ChangeBrief

Python · LLM Engineering

Own R&D · public repo · github.com/alejandrolunatech/ai-engineering-labs

- Bounded PR-review agent, zero-trust MCP gateway and an AI engineering golden path, with 480+ automated tests
- ChangeBrief: LLM service with an eval gate in CI, spend cap, rate limits and kill switch

EXPERIENCE

Software & AI Engineer, own products CURRENT

Alejandro Luna AI Delivery & Transformation · 2026 – Present · Netherlands · Remote

SaaS · Payments · Media · LLM Engineering

Designing, building and running my own software products end to end, from architecture and data model to payments, deployment and operations.

KEY OUTCOMES

- Interview Audio Pack (live since October 2026), Bouwarchief AI (live on AWS, demo on request), Kinotela (in progress) and ChangeBrief: see Selected Products above
- Next.js on Vercel, PostgreSQL, Stripe Checkout and webhooks, background workers, Google OAuth, Microsoft Graph email and LLM pipelines
- Every change goes through a pull request with CI (type checks, lint, unit, integration and end-to-end tests); I review and merge every one

TECHNOLOGIES & TOOLS: TypeScript · Node.js · Next.js · React · PostgreSQL · Stripe · Vitest · Playwright · Vercel · Python · FastAPI · AWS Lambda + CDK · LLM APIs

AI Enablement & Agentic Workflows (Agile Coach & AI Enablement role, freelance)

Booking.com · Jun 2026 – Oct 2026 · Amsterdam, Netherlands

FinTech · Software Delivery

Freelance role in Booking.com's FinTech organisation, building agentic AI workflows and enabling AI-assisted software delivery with Product and Engineering teams.

KEY OUTCOMES

- Built agentic, MCP-enabled workflows for workshop preparation, experiment tracking and data-informed value-stream mapping
- Configured bounded AI agents and reusable skills with evidence rules and a person accountable for every output

TECHNOLOGIES & TOOLS: Agentic workflows · MCP integrations · Human-in-the-loop AI · AI-assisted development

AI Enablement & Delivery Lead (Senior Scrum Master role)

Albert Heijn / AH Tech · Oct 2025 – Jun 2026 · Zaandam, Netherlands

eCommerce · Fulfilment · Logistics

Dev(Sec)Ops teams running mission-critical fulfilment, logistics and mechanisation systems.

KEY OUTCOMES

- Led GitHub Copilot adoption in the daily workflow of Dev(Sec)Ops teams, with review and test guardrails
- Designed and ran hands-on AI-assisted development workshops for engineering and product teams

TECHNOLOGIES & TOOLS: GitHub Copilot · AI-assisted development · DevSecOps · Responsible AI

Founder & IT Transformation Consultant

Arkad · Apr 2025 – Oct 2025 · Netherlands

eCommerce · Training

Own consultancy and training initiative for e-commerce sourcing.

KEY OUTCOMES

- Built Python scripts with LLM APIs to automate product research and sourcing
- Designed and taught a 6-week live programme for 50+ participants

TECHNOLOGIES & TOOLS: Python · LLM APIs · Automation

Release Train Engineer; Scrum Master of a CI/CD team

EVBox Group · Sep 2021 – Apr 2025 · Amsterdam, Netherlands

EV Infrastructure · Embedded, Cloud & Mobile

Delivery roles in an EV charging company spanning embedded software, cloud platforms and mobile apps.

KEY OUTCOMES

- Launched and coached a CI/CD team that built the release pipelines, improving release frequency and cycle time
- Ran delivery for a 10+ team release train across embedded, cloud and mobile products, including Eichrecht-certified chargers for the German market

TECHNOLOGIES & TOOLS: CI/CD · DevOps · Embedded & cloud delivery · SAFe

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Senior Software Developer

Backbase · Jun 2019 – Aug 2021 · Amsterdam, Netherlands

Fintech · Digital Banking Platform

Senior backend engineer on enterprise digital banking applications for international banks.

KEY OUTCOMES

- Designed and implemented RESTful APIs and microservices in Java 11 and Spring Boot for complex banking requirements
- Containerised services with Docker and deployed them on Kubernetes
- Worked with solution architects on end-to-end system design, and on site with a banking client in Croatia
- Applied modern Java (lambdas, streams, error handling) and clean code in agile, cross-functional teams

TECHNOLOGIES & TOOLS: Java 11 · Spring Boot · Microservices · REST APIs · Docker · Kubernetes · IntelliJ IDEA

Senior Java Developer (offshore, US clients)

TEAM International · Jun 2015 – Jun 2019 · Bogotá, Colombia · Remote

Enterprise Webcasting · SaaS

Offshore senior developer for ON24 (San Francisco), building modules of its enterprise webcasting platform.

KEY OUTCOMES

- Built servlets, JSP pages and business logic for several modules of the ON24 webcasting platform
- Added a social sharing module with OAuth 2.0 that publishes videos to YouTube, Facebook and Twitter
- Designed and tuned relational data access with SQL and PL/SQL for high-volume features
- Practised TDD and BDD, maintained Jenkins CI pipelines and built Angular front-end components

TECHNOLOGIES & TOOLS: Java 7/8 · Servlets / JSP · EJB · JPA / JPQL · OAuth 2.0 · SQL / PL-SQL · Jenkins · Angular · IntelliJ IDEA · Eclipse

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Senior Java Developer

Globant · Nov 2016 – Mar 2017 · Bogotá, Colombia · Remote

Enterprise Analytics

Senior Java engineer for Tickr (San Francisco), building custom enterprise modules for customers such as Google and O2.

KEY OUTCOMES

- Built new modules and REST services in Java 8 with Guice dependency injection
- Wrote JUnit tests and API specifications that sped up front-end integration

TECHNOLOGIES & TOOLS: Java 8 · Guice (DI) · REST APIs · JPA / JPQL · JUnit · IntelliJ IDEA

Software Architect / Full-Stack Developer

Tradeway (own company) · Apr 2013 – Jun 2015 · Bogotá, Colombia

eCommerce · Web Development

Own company: e-commerce and custom web applications for clients.

KEY OUTCOMES

- Redesigned a servlet application with JSF, PrimeFaces, JPA and EJB to remove scalability limits, with server-side validation
- Built and customised online stores on PrestaShop (PHP) and corporate websites for clients

TECHNOLOGIES & TOOLS: Java EE · JSF / PrimeFaces · JPA · EJB · PHP · SQL

Java Web Developer

Carvajal, IGAC, Treesoft · Feb 2011 – Apr 2013 · Bogotá, Colombia

Healthcare · Public Sector GIS · Education

First engineering roles: Java web applications for healthcare and for Colombia's national mapping authority.

KEY OUTCOMES

- Carvajal (Jan–Apr 2013): Spring MVC, JPA and JSP web applications for clinics and hospitals
- IGAC (Nov 2011 – Jul 2012): a GIS module that places traffic signs on the map of Colombia (Java, Hibernate, Oracle); advised a team of about 10 developers on design decisions
- Treesoft (Feb–Jul 2011): an educational Flash game with a Java back end

TECHNOLOGIES & TOOLS: Java · Spring · Hibernate · JSP · JavaScript · Oracle

CERTIFICATIONS & TRAINING

★ **Certified Kubernetes Application Developer (CKAD)** — Linux Foundation · 2020 (expired 2023)
Cloud & Engineering · Verify ↗

★ **GitHub Copilot** — Microsoft · 2026
AI & Development · Verify ↗

Professional Scrum Master II (PSM II) — Scrum.org · 2025
Agile Delivery · Verify ↗

Node.js Essential Training — LinkedIn Learning · 2026
Software Engineering · Verify ↗

TypeScript Essential Training — LinkedIn Learning · 2026
Software Engineering · Verify ↗

Express Essentials: Build Powerful Web Apps with Node.js — LinkedIn Learning · 2026
Software Engineering · Verify ↗

Learning Spring with Spring Boot — LinkedIn Learning · 2019
Software Engineering · Verify ↗

Java EE: Design Patterns and Architecture — LinkedIn Learning · 2019
Software Engineering · Verify ↗

TECHNICAL SKILLS

Backend: Java (8 and 11 in production, 21 in my public repos) · Spring Boot · Spring Framework · JPA / Hibernate · Java EE (Servlets, JSP, JSF, EJB) · Guice · REST APIs · Microservices · OAuth 2.0 · Node.js

Front End & Full Stack: TypeScript · Next.js · React · JavaScript · HTML / CSS · Tailwind CSS · Zod · Angular (earlier) · PrimeFaces (earlier)

Data: PostgreSQL · Oracle · SQL Server · MySQL · SQL & PL/SQL · Database-enforced constraints & triggers

Quality & Design: JUnit · TDD / BDD · Vitest · Playwright · Clean Code · Design patterns: MVC, DAO, Factory, Builder, Facade, Decorator, Singleton, Dependency Injection

Platform & DevOps: Docker · Kubernetes (CKAD) · GitHub Actions · Jenkins · Vercel · AWS (Lambda, CDK, Bedrock) · Azure DevOps · Git · IntelliJ IDEA · 1Password secrets management

Agile & Delivery: Scrum (PSM II) · Kanban · SAFe · PI Planning · Refinement & story slicing · Flow metrics & value-stream mapping · Cross-team dependency management

AI Engineering: Claude Code · GitHub Copilot · Anthropic / OpenAI / OpenRouter APIs · LLM evals · MCP · Python

EDUCATION

B.Sc. Computer Science & Telecommunications Engineering · Universidad Sergio Arboleda, Bogotá, Colombia (2006–2012)

Enterprise Java (Java EE) — International Internship (scholarship) · Infosys, Mysore, India (2012)

C1 English Proficiency · LTC Eastbourne, Eastbourne, England (2011)

Let's work together

Open to senior software engineering and AI engineering engagements, direct or through partners.

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