Engineer Software

Directed full-stack GIS map development

Directed full-stack GIS map development, overseeing PostgreSQL, Mapbox, ReactJS, and NodeJS to deliver an integrated solution.

2022 – 2024

full-stack mapping, from database to browser

Situation. By this stage the GIS map had stopped being a feature and become the reason customers logged in. The trouble was that it had grown up in pieces. Spatial data lived in PostgreSQL, the map itself was drawn with Mapbox, and the application around it was ReactJS on the front with NodeJS behind. Each part worked on its own. They just hadn't been built to fit together, and the seams were starting to show.

Task. The role covered the full-stack development of the map and the technical direction that came with it: the data model, the rendering, the API and the React front end. The goal was to turn four things that happened to share a repository into one product worth standing behind.

Action. The architecture was set first, then the work stayed close to the code rather than steering from a distance. On the data side, the PostgreSQL spatial model was kept tidy so queries didn't slow to a crawl as the datasets grew. Mapbox did the drawing; the job was feeding it the right data at the right zoom levels instead of everything at once. On the application side, the ReactJS and NodeJS work got reviewed, the team was pushed toward shared conventions, and responsibilities kept getting moved back to the layer they belonged in whenever one started leaking into the next. A fair amount of it was unglamorous work: catching the small inconsistencies before they hardened into architecture.

Result. What came out was a single integrated map application, with data, rendering and interface finally pulling the same way. It became a core part of the platform, and something the team could keep extending without it buckling every time a layer got added.

Bring this experience to your project

Use “Directed full-stack GIS map development” as a starting point for a similar challenge in your organisation. The services behind this work are available for your project. The part users never see: where the data lives, what the rules are, and how other systems are allowed to talk to it.

Explore our services Get in touch →

Look behind the result

Read the situation, decisions and result in this example. We can discuss which parts transfer to your constraints and which need another approach. Directed full-stack GIS map development — full-stack mapping, from database to browser

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Need a full-stack map application built?

Talk through your project with the engineer responsible for delivery. We agree the scope, price basis and handover in writing before work begins.

Role context: GIS Software Development Team Lead. It draws on Platform Architecture, Backend Engineering, Frontend Engineering, Full-Stack Development, APIs & Integration, Databases, PostgreSQL, Performance Tuning, GIS / Geospatial and Technical Leadership. And while you are here, we are rather good at Backend & API Development, Frontend Development, Full-Stack Product Development, GIS & Geospatial Solutions and Technical Leadership & Consulting.

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One piece of **a longer record** — and it is all on this site.

Every entry is written the same way: the situation, the task, what we did and what changed.

See the whole record

Define the improvement you need

Describe the workflow, the existing interfaces and the users who need the change. We can define a testable delivery and a handover that lets your team maintain it.

See what it costs Get in touch →

Need a full-stack map application built?

Ask about the decisions behind “Directed full-stack GIS map development”. You will speak with the people who can explain the work and assess your own project.

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Contact card

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