

Ivan Babkov

11 years of relevant experience

Portfolio: [ibabkov.com](http://ibabkov.com)

Github: [github.com/ibabkov](https://github.com/ibabkov)

Senior Software Engineer | 3D Mapping & Visualization

Toronto, Canada

Email: [contact@ibabkov.com](mailto:contact@ibabkov.com)

Linkedin: [linkedin.com/in/ivan-babkov](https://linkedin.com/in/ivan-babkov)

## MAIN SKILLS

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Typescript • Javascript • Node.js • WebGL • GLSL • Three.js • Unity • Babylon.js • Pixi.js • Spark.js • 8thWall • Leaflet • D3.js • Vue • React • React Three Fiber • React Native • Docker • Blender • Spline • Figma • HTML • CSS

## OTHER SKILLS

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Express • Next.js • Nest.js • MobX • Redux • A-Frame • Mapbox GL • Deck.gl • Zapworks • MongoDB • GraphQL • Webpack • Babel • ESbuild • Jest • Enzyme • RTL • Three Test Renderer • Cypress • Selenium • AWS • Git • Linux • C++ • C# • Python • Swift • Kotlin • .Net • Django

## WORK EXPERIENCE

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Senior Software Engineer, Mappedin ([mappedin.com/demos](https://mappedin.com/demos)) – Jan 2023 - Dec 2025, Waterloo, Canada

Mappedin was the global platform for indoor spatial data management and mapping experiences with venues in 57 countries. At Mappedin, I played a crucial role in the SDK development team. My key contributions and achievements:

- Refactored the entire Web SDK(indoor map visualization) to migrate to an Entity-Component-System (ECS) architecture, improving scalability and time-to-market (TTM) for new features.
- Engineered end-to-end 2D/3D features across the stack, implementing core logic in TypeScript/WebGL and exposing consumer-friendly APIs for Web (React), iOS (Swift), and Android (Kotlin) environments.
- Designed a high-performance rendering pipeline integrating GLSL shaders and multi-buffer rendering with application-level state, delivering advanced visuals (Ambient Occlusion, Anti-Aliasing, etc.).
- Built an adaptive performance system with real-time benchmarking and hardware-adaptive rendering, ensuring consistent 30+ FPS on low-end devices.
- Implemented product analytics to provide insights into feature utilization and customer challenges.
- Facilitated the integration of the SDK across different products (2d floorplan editor, bespoke solutions, etc.) through cross-team collaboration and mentoring new engineers.
- Tech stack: Typescript, WebGL, GLSL, Three.js, ESBuild, React, React Native, Swift, and Kotlin.

Senior Web Developer, Cian ([cian.ru](http://cian.ru)) – May 2018 - July 2022, Remote

Cian was the Russian online real estate database website (<http://bit.ly/3cVijks>) and one of the world's ten most popular real estate websites (<http://bit.ly/2IEYkZo>) in 2022. My key contributions and achievements:

- Supervised two front-end teams, mentored the engineers, and owned their front-end architecture.
- Migrated a part of the core legacy monolith (Python/Django) to scalable [Node.js](https://nodejs.org/)(BFF), Python, or C# microservices architecture, successfully delivering over 18 services and decoupling backend logic from the UI.
- Integrated immersive 3D 360° panoramas for property listings using WebGL and Krpano.
- Led a technical team building a huge reusable React components library, including features like component and documentation auto-generation, performance monitoring, and a cross-team communication process.
- Led the full-stack redesign of the "New Apartments" vertical, optimizing rendering (SSR) and API performance to achieve a 40% improvement in TTI and a 13% increase in lead conversions.
- Defined engineering standards by establishing a unit testing framework (achieving 85% core coverage) and authoring the company's technical skills map and grading system for developer advancement.

- Tech stack: Node.js, C#, Python, .Net, Django, Express, gRPC, React, Redux, Typescript, WebGL, CSS.

### Software Engineer, IRZ – Aug 2017 - May 2018

IRZ was a small aerospace company focused on aerospace software for the International Space Station, ground-based radio stations, and ground control missions. My key contributions and achievements:

- Architected a bi-directional 3D command interface using WebGL/Three.js and WebSockets, enabling real-time telemetry monitoring and direct command execution back to the C++ mission core.
- Developed a hybrid integration layer, embedding React interfaces within a C++/Qt desktop application (via Qt WebView) to bridge low-level hardware controls with modern web UI.
- Optimized the rendering loop for data-heavy dashboards, reducing average CPU load from 95% to ~10% by implementing efficient state management and minimizing re-renders during high-frequency updates.
- Established the company's first component library, designing the system in Sketch and implementing the React/TypeScript API contract to standardize UI development
- Modernized the engineering workflow, transitioning the department from Waterfall to Agile/Kanban methodologies, significantly reducing release cycles for critical updates.
- Tech stack: TypeScript, C++, WebGL, GLSL, WebSockets, Three.js, React, Qt (QWebView), Webpack

### OTHER WORK EXPERIENCE

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Web Developer, Tinkoff ([tinkoff.ru](http://tinkoff.ru)) – Aug 2015 – Jul 2017

Javascript Developer, Ru-Center Group – Feb 2014 - Dec 2014

### EDUCATION

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2014 Master's degree in business management, Moscow State University of Railway Engineering  
WES certified, ECA# 3922093IMM, Mar 2019.