Ivan Babkov

3D Developer | Senior Software Engineer
12 years of relevant experience
Portfolio: ibabkov.com
Github: github.com/ibabkov

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MAIN SKILLS

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

OTHER SKILLS

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

WORK EXPERIENCE

Senior Software Engineer, Tomoverse (tomoverse.tech) – *Mar 2026 - Present, Vancouver, Canada*

Tomoverse Imaging is a software company specializing in cardiac CT imaging solutions for planning structural heart and coronary interventions. The flagship product, tvCT, gives clinicians tools designed by interventional cardiologists for efficient, targeted cardiac imaging analysis. My main contributions and achievements include:

- Designed and developed tvCT, a native desktop Electron app that renders 2D scans and 3D volumetric data using VTK.js, Cornerstone.js, and WebGL.
- Created the backend with Node.js and PostgreSQL to store, search, and edit scans(DICOM), and to let health professionals share studies safely.
- Improved editing tools and the graphics pipeline that help clinicians plan structural heart and coronary procedures.
- Tech stack: Typescript, WebGL, GLSL, VTK.js, Electron, Angular, Node.js, PostgreSQL.

Senior Software Developer, Mappedin (mappedin.com/demos) – *Jan 2023 - Dec 2025, Waterloo,Canada*

Mappedin was the leading platform for indoor spatial data management and mapping experiences. Mappedin worked with businesses in over 57 countries and more than 1,700 venues. At Mappedin, I played a crucial role in the SDK development team. My main contributions and achievements include:

- Refactored the entire Web SDK 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), React Native, iOS, and Android environments.
- Designed a high-performance rendering pipeline integrating raw GLSL shaders and multi-buffer rendering with application-level state, delivering advanced visuals (Ambient Occlusion, Anti-Aliasing, etc.).
- Built an adaptive performance system that monitors hardware capabilities in real-time to auto-adjust rendering quality, 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 through cross-team collaboration and mentoring new engineers.
- Tech stack: Typescript, WebGL, GLSL, Three.js, ESBuild, React, Swift, and Kotlin.

Senior Web Developer, Cian (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. I have made the following accomplishments and contributions:

- Supervised two front-end teams and owned their front-end architecture.
- Migrated part of the core legacy monolith (Python/Django) to a scalable microservices architecture (Node.js/C#), successfully delivering over 18 services and decoupling backend logic from the UI.
- Integrated immersive 3D 360° panoramas (WebGL, Krpano) for property listings.
- Led a technical team building a 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 100% 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.

OTHER WORK EXPERIENCE

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

Web Developer, Tinkoff (tinkoff.ru) – *Aug 2015 – Jul 2017*

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

EDUCATION

2014 Master's degree in business management, Moscow State University of Railway Engineering

WES certified, ECA# 3922093IMM, Mar 2019.