

Ivan Babak

Software Architect, Web Frontend Engineer

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Proficient in architecting, building, and maintaining complex web applications and components. Has over 10 years of extensive software engineering experience ranging from software architecture, information systems, web application development to UI design, API design, compilers, network protocols, computer graphics, and low-level programming. Passionate about open source, the future of web technologies and tools while keeping the balance between cutting-edge and solid battle-tested solutions.

Experience

Software Architect

2016 – Present

RealtyShares

San Francisco, CA

- Architect, implement, and maintain software systems to provide technology solutions for business problems; oversee software architecture within the scope of assigned and adjacent systems.
 - Web application platform for the Investment Marketplace Website & Dashboards (implement from scratch; replace the legacy heavily customized CMS to ensure performance and consistency of UX and development). *Features:* universal JavaScript & React with Node.js, component structure, design system, mobile-adaptive components, code sanity tools.
 - Proprietary backend in C++. *Features:* strongly-typed in-memory database with an event log storage and an HTTP API server. *Areas of focus:* CQRS APIs (concept and implementation), event log evolutions (implementation).
 - Near-real-time data replication service from the event log into a SQL relational database (implement from scratch; uptime 99.45% for over 1 year without maintenance). *Features:* schema and event log mutation translation, resilience to failures, resume after restart.
 - Implement a web app and a backend module in C++ for an internal real-time tool for rapid servicing of incoming leads. *Features:* data-driven lead scoring, phone call scheduling, browser notifications, integration with dialer browser extensions, call system event ingestion.
 - Implement several productivity tools: a toolkit to scaffold Node.js apps in TypeScript, a web app to serve as a visual documentation of the proprietary storage schema; a web app to visually compare graphs of storage object relations for debugging of complex data evolutions that involve relation changes; apps for data pulls and automated PDF document categorization to speed up data and document handoff.
- Establish and maintain overall architectural principles and standards for web engineering to ensure enterprise qualities of the software systems (scalability, fault tolerance, extensibility, long-term maintainability). Introduce coding guidelines, patterns, best practices, modern technologies, component-oriented and data-driven approaches.
- Provide leadership, technical guidance to engineers; engineering expertise to product managers and stakeholders. Drive research and prototyping to find out how leading edge technologies can be leveraged. Analyze and provide feedback on product strategy, architecture, and design.

Technologies:

- JavaScript (ES2015+, ES6, React, Redux, Redux-Saga, Webpack, ESLint, and more), SCSS.
- TypeScript, Node.js, NPM.
- C++ (backend), C# .NET (legacy platform), F# .NET (code reviews), SQL.
- Git, GitHub, Bash, Unix CLI tools, jq.

- Developed a component-oriented front-end architecture, and most of the core frontend components, notably:
 - web-based video player that enables live video streaming playback across platforms and devices;
 - video archive timeline and calendar with support for timezones and localization;
 - motion zones real-time display and configuration UI;
 - UIs to add devices, manage access rights, public access, map location, and more.
- Architected and implemented an internationalization system with support for white-label overrides; it is used in both server-side and browser-side rendering. Developed a web-based UI for external translators to edit the translations.
- Architected and implemented an automatic error reporting system that collects detailed info on runtime errors from both browser side and server side.
- Architected and implemented the Ivideon customer web portal that can be customized to serve as a white-label solution.
- Developed a single-page version of Ivideon TV – a web application to watch live streams from Ivideon-enabled cameras published by the users around the world.
- Developed UI / UX wireframes for some of the UIs.
- Developed the Standalone Web SDK that provides a set of ready-to-use components for making offline web applications that integrate with Ivideon software.
- Architected the Cloud Web SDK that provides an up-to-date cloud-based version of the components for making online web applications that integrate with Ivideon Cloud.
- Ensured cross-browser support for desktop Google Chrome, Microsoft Internet Explorer 11, 10, 9, 8, Mozilla Firefox, Opera, Mac OS X Safari; mobile iOS Safari, Android Google Chrome.
- Developed and successfully conducted a compiler-based automated code refactoring to upgrade the large code base to modern standards and technologies in an almost automatic way.
- Developed a set of reusable components to streamline the development of the company website.
- Developed a set of tools to speed up the highly-concurrent development process.
- Enabled automatic documentation generation from the source code.
- Established web engineering and coding style guidelines, patterns, and methodologies.
- Prototyped and integrated modern web technologies and best practices.
- Ensured long-term maintainability of the web products.
- Conducted code reviews, providing technical guidance; applied pair programming techniques.
- Performed project planning, controlled execution of the Web team.
- With the Cloud team, architected a set of APIs, both internal and public-facing.
- With the QA and Customer Support team, established and improved the user feedback loop to leverage the quality of the product.

Technologies:

- JavaScript (ES2015, ES5, ES3, jQuery, React, Redux, and more).
- Node.js (Webpack, Babel, Gulp, and more).
- HTML (HTML5 canvas graphics and video streaming), Flash (video streaming).
- CSS, LESS, applying BEM methodology.
- PHP (PHP5, Yii Framework, MODx).
- Git, Mercurial.

Software Engineer

2008 – 2010

Fintech (Finansy, Informaciya, Tehnologiya)

Moscow, Russia

- Developed an architecture of a single-page application, including full-stack communication with the data layer on the backend.
- Developed a reliable preloader of the browser-side application components, with error handling, for slow internet connections.
- Developed a web-based desktop-like user role selector UI similar to the Logon Screen of Microsoft Windows 7.
- Developed a jQuery UI-compatible web-based desktop-like Microsoft Fluent User Interface (similar to the Ribbon toolbar, the Orb menu, and the collapsible panel layout of Microsoft Office 2007).
- Developed a jQuery UI-compatible tree view component with asynchronous loading of the subnodes, and evented API for inter-component communication.
- Developed a component that orchestrates the UI so that only the operations applicable to the selected entity by the current user, are enabled in the tree node's context menu and the toolbars.
- With a teammate, developed a customizable grid view component for the financial reports; the non-trivial grid layout and mixed media content is obtained from the data layer.
- Ensured cross-browser support for Microsoft Internet Explorer 7, 8, Mozilla Firefox, Opera, and Google Chrome.

Technologies:

- Frontend: JavaScript (ES3, jQuery, jQuery UI, Prototype.js), HTML, CSS.
- Backend: ASP.NET MVC (C#).
- Microsoft Visual Studio; Team Foundation Server.

Other skills

- Active open source contributor to popular projects and ecosystems.
- Experienced in TDD, test automation (Jest, Mocha, Chai, Sinon, Cypress, Puppeteer, GTest).
- Familiar with modern frontend frameworks (Vue.js, Angular, Ember.js, Next.js, Gatsby.js, etc.).
- Confident in Bash scripting and CLI tools.
- Confident in Git, GitHub.
- Developed software in C#, C++, ActionScript.
- Experienced user of Adobe Photoshop, familiar with Sketch and InVision.
- Experienced user of Atlassian JIRA, Confluence, Bitbucket.
- Experienced user of macOS, Windows, Linux (Ubuntu).
- English (fluent), Russian (native speaker).

Education

Bauman Moscow State Technical University

2005 – 2011

- M.S. in Computer Science, GPA 4.86 of 5.0, with honors. Thesis on "A Method for Adaptive Distribution of Tasks in a Computing Cloud".
- B.S. in Computer Science, GPA 4.72 of 5.0, with honors. Thesis on "Software for User Authentication Using Voice".