

# Ivan Hilkov

Lead Fullstack Engineer — Moscow, Russia (UTC+3)

## Contact

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## Professional Summary

Lead Fullstack Engineer with 17+ years building high-load web applications with React/Next.js and data-intensive UIs. Deep experience across streaming/media and geospatial domains. Strong focus on pragmatic architecture, performance optimization, and end-to-end delivery. Led teams of up to 8 engineers, set up QA automation and CI/CD, and collaborated closely with product and QA for predictable releases. Remote-first, immediate availability, open to international contract and invoicing.

## Core Competencies

- **Frontend:** React, Next.js, TypeScript, Redux, React Router, React Native, HTML, CSS, TailwindCSS, Webpack
- **Backend:** Node.js, FastAPI, Flask
- **Databases & Caching:** PostgreSQL, Redis
- **Geospatial & Media:** Cesium, Mapbox, Leaflet, Potree, Pannellum, FFmpeg, HLS
- **Quality & Tooling:** Git, Docker, CI/CD, Cypress, Jest
- **Practices:** Agile, Scrum; performance optimization; accessibility; frontend architecture

## Selected Achievements

- **START:** Cut API latency by ~40% during peak traffic through query and caching optimizations.
- **Skyeer:** Co-designed QA automation (800+ Selenium E2E tests) with QA team; release stability improved by ~80%.
- **Skyeer:** Delivered platform MVP in 3 months; 1st place at Gazprom “Unmanned Biathlon” (measurement accuracy  $\pm 0.02$  m<sup>3</sup>).
- **Skyeer:** Implemented resumable uploads up to 100 GB via tus.io with pause/resume support.

## Professional Experience

**HRONIKA — Co-Founder / Fullstack Engineer — Apr 2025 — Present — Moscow**

Product: Autonomous timelapse system for construction/infrastructure monitoring.

- Built prototype on Raspberry Pi 4 + Canon 1100D with LTE connectivity and UPS HAT + Li-ion in IP67 enclosure; solar-ready.
- Frontend: React, HeroUI, TailwindCSS (camera dashboard, photo viewing, timelapse generation); E2E tests in Cypress.
- Backend: FastAPI with task queues (Celery + Redis), REST API for auth, camera, photo, timelapse management.

- Authored technical documentation and public roadmap; submitted application to Sber500 accelerator.
- Site: [hronika.tech](https://hronika.tech)

## **START — Lead Frontend Engineer — Jan 2023 — May 2024 — Moscow**

Domain: Streaming/media; Smart TV and web platform.

- Built new sections in Next.js: “Movies on TV” and “TV Series”, including player and TV channel storefront integration.
- Shipped the TV section with program schedules and catch-up TV (viewing past programs).
- Refactored channel viewing pages, improving navigation and UX.
- Maintained and extended admin editor (React + Bootstrap) and generated Open Graph metadata server-side (SSR).
- Optimized user queries and caching to reduce server load during peaks; latency reduced by ~40% in specific high-traffic events.
- Improved lazy-loading of home page previews and dynamic feeds with infinite scroll; implemented banner grid fed by REST API.
- Refactored FAQ and support contact flow; redesigned login and subscription checkout.
- Reworked monolithic payment form by extracting business logic/state to Redux for readability and reuse.
- Streamlined A/B testing system to speed up experimental feature rollout.
- Led and mentored 4 frontend engineers; task estimation, architecture, onboarding, and daily syncs.
- Link: [start.ru](https://start.ru) — Example page: [start.ru/archive/tvmovie](https://start.ru/archive/tvmovie)

## **Tvigle — Lead Frontend Engineer — May 2024 — Oct 2024 — Moscow**

Domain: Online cinema.

- Maintained existing video player (JavaScript, jQuery); integrated ad SDKs (Yandex Ads, VK Ads) via MRAID.
- Refactored ad module to support VAST 4.0 (from 2.0).
- Adapted online cinema layout for mobile devices.
- Built mobile application using React Native (Android/iOS support).
- Performed code review and audit for the main Next.js project.

## **Skyeer — Lead Frontend Engineer — Apr 2017 — Jan 2023 — Moscow**

Product line: Web-GIS platform for UAV data analytics, photogrammetry automation, and domain solutions (construction, mining, logistics, landfills).

### **UAV Data Analytics Web Service — [map.skyeermap.com](https://map.skyeermap.com)**

Cloud platform for spatial data analysis and object monitoring. Integrates drone data and geodetic measurements to assess material volumes and monitor object condition using 3D models and orthophotos.

- Delivered MVP in 3 months for Gazprom “Unmanned Biathlon” (1st place; accuracy  $\pm 0.02 \text{ m}^3$ ) using React, Redux, webpack, Leaflet.  
Reference: [skyeermap.com/blog/achievement/skyeer-luchshee-softvernoe-reshenie](https://map.skyeermap.com/blog/achievement/skyeer-luchshee-softvernoe-reshenie)
- Evolved MVP to full web-GIS product: React, Redux-Saga, React Router, Mapbox, Potree, Recharts, TurfJS, proj4js, GDAL, Django REST Framework, tus.io, Puppeteer.
- Implemented user uploads up to 100 GB with resumable transfers (tus.io), pause/resume; formats: GeoTIFF, ECW, DXF, WMS, XYZ, Cesium Ion 3D, point clouds (Potree), SHP, KML, GeoJSON.
- Built layer comparison UI, survey date switching, basemap/projection selection, layer ordering and transparency.

- Added swipe comparison for multi-date user layers and 360° panoramas using Pannellum; point cloud visualization via Potree.
  - Tools for measurements: area, volume, slope, longitudinal profile, elevation points, markers, with draw/import for GeoJSON/WKT/KML/SHP.
  - Export of measurements to XLSX/PDF; attachments upload (JPG, PNG, PDF, DOC, XLS, etc.).
  - Role/access control (Project, Flight, Measurement): Manager, Pilot, View-only, etc.
  - Integrated CesiumJS for 3D with parity to Mapbox functionality.
  - Authored a 50+ component UI library with a React Cosmos playground.
  - Internationalization with i18next (English and German).
  - Introduced Prettier/ESLint; >150 Jest tests with ~80% business-logic coverage.
  - Set up CI/CD pipeline, automated frontend testing, integration, and releases.
  - Co-implemented Selenium testing (800+ automated tests) with QA; release stability improved by ~80%.
  - Hired 8 frontend engineers (Middle–Senior); onboarding and mentoring in a complex GIS domain.
  - Established Agile practices: weekly sprints, daily standups, grooming, rolling releases, demos, retrospectives.
  - Organized technical writing and documentation process (architecture, functionality, user scenarios).
- Docs: [doc.map.skyeormap.com](https://doc.map.skyeormap.com)

### **Automated Photogrammetry — attractor.aero**

Automated service from UAV data upload to orthophoto, DTM, and point cloud.

- UI built on shared components from [map.skyeormap.com](https://map.skyeormap.com); multilingual via i18next.
- Large-volume image upload (10,000+ photos) via tus.io: bandwidth detection, parallel upload, pause/resume on interruptions.
- Displayed EXIF metadata; assembled minimal survey kit (DJI Mini 2, RTK GNSS Emlid).
- Wrote API requirements and formalized output data specs; prepared user and technical documentation.
- Implemented automated testing using Selenium; set up Prettier/ESLint.

### **Quarry Road Monitoring — NLMK IT (Habr article)**

Automated assessment of quarry road conditions based on aerial photography and photogrammetry.

- Implemented in 2 months on a minimal stack: Django, DRF, jQuery, Bootstrap, Leaflet.
- Built prototype, coordinated solutions/UI with the client; tech supervision and process setup; authored user docs.

Article: [habr.com/ru/companies/nlmk/articles/650419/](https://habr.com/ru/companies/nlmk/articles/650419/)

### **Linear Object Monitoring — aroinspector.ru**

Monitoring of linear objects with video archive and picket referencing.

- Advised on architecture for video + geodata specifics; prototyped video stream ↔ GPS log synchronization; formed the core team.

### **Waste Landfill Monitoring — reo.ru/flyby**

Nationwide project for landfill monitoring using drones with laser scanners.

- Advised on architecture for 3D data and video documentation; formed the team; supported the project from prototype to release.

## **Amediateka.ru — Senior Frontend Engineer — Feb 2019 — Dec 2019 — Moscow**

SVOD platform.

- Built account support sections (FAQ, feedback); enhanced payment form and integrations using React/Redux.
- Implemented catalog pages on Next.js with SSR; content cards and episode switcher; extended player features (actor info, auto-next, recommendations).
- Added Open Graph metadata for social previews; optimized builds with code splitting.

## **Ivideon (Cloud Video Surveillance) — Senior Frontend Engineer — Sep 2016 — Apr 2017 — Moscow**

- Extended UI/UX library with custom timeline and storyboard with event markers; adapted components for mobile.
- Evolved proprietary state management (Redux-like) with async data loading; built account pages with design system components.
- Built an internal Canvas tool to annotate queues for ML training (automatic visitor counting).

## **REKOD (JSC NPK REKOD) — Senior Frontend Engineer — Feb 2016 — Sep 2016 — Moscow**

- SPA for WWII monuments monitoring/inspections with Create React App, React, React Router, Redux, Redux-Saga.
- Mobile adaptation with Bootstrap/LESS; cartography module (React + Leaflet) for tracks and object meta.
- Photo upload/view with comments and on-image annotations; React Native app with offline mode and sync on reconnect.
- White-label architecture (theming, object schema/description via REST API) for re-use; extended inspections with tasking and automated defect verification.

## **Liga Stavok — Frontend Developer — Sep 2015 — Jan 2016 — Russia**

- Built scalable UI/UX library of 40+ React components and a custom playground (Storybook-like).
- LESS styling with dynamic variables/media queries; centralized state via Redux with dynamic slice import (code splitting and on-demand state injection).
- Integrated ASP.NET REST API via Redux Thunk; migrated build from Gulp to Webpack (build time 20 → 1 minute; smaller bundles via split chunking).

## **OneTwoTrip — Frontend Developer — May 2015 — Sep 2015 — Moscow**

- Maintained jQuery payment module (5,000+ LOC); generated PDF tickets with PhantomJS.
- Implemented upsell/cross-sell popups using REST API; optimized ticket search via static data preloading with Lua scripts.
- Built email campaign builder UI (Bootstrap); refactored payment form to React + Webpack; introduced Redux for complex state.
- Built landing pages with dynamic parameters via REST API; refactored search page with adaptive styling and full mobile support.

## **Sovzond — Frontend Developer — Jun 2013 — May 2015 — Moscow**

- Designed architecture and built the “Satellite Imagery Archive” SPA using BackboneJS and Bootstrap.
- Integrated REST API for dynamic satellite image search; built polygon drawing components (Leaflet.js).
- Implemented cart and account for ordering/downloading imagery; extended Leaflet with WMS cadastral data and object info.

- Enhanced GeoJSON styling (colors, borders, interactivity); virtualized table scrolling for large datasets (BackboneJS).
- Initiated regression testing: wrote test cases, hired and onboarded the first tester.
- Refactored “Satellite Imagery Catalog”: migrated ExtJS → BackboneJS; full REST integration; white-label theming/branding/geographic restrictions.
- Integrated cartographic components into Django Admin; automated builds (Grunt), dependencies (Bower), Django integration.
- Adopted Mercurial (Hg) and Bitbucket as primary VCS.

### **undev.ru — Frontend Developer — Jun 2012 — Jun 2013 — Moscow**

- Built BackboneJS SPA for live broadcasts from 1,000+ polling stations (Elections 2012).
- Implemented Yandex.Maps-based cartography with clustering; CoffeeScript video player for PEMF 2010 forum.
- SPA for archived election video browsing with time/station search; platform theming and map/data configuration for clients.
- Modular tests with MochaJS/SinonJS; build with Grunt/Bower; architecture with dependency injection (RequireJS).

### **bigbuzzy.ru — Frontend Developer — Mar 2011 — Jun 2012 — Moscow**

- Interfaces with HTML/CSS/jQuery/BackboneJS/XSLT; pixel-perfect cross-browser layout including IE 6–8.
- Integrated frontend into proprietary framework (Imprimatur engine); optimized XSLT for rendering performance.
- Authored UI guidelines and CSS component library; mentored junior specialists; dynamic AJAX banner components and comment feed improvements.
- CSS3 animations with graceful degradation; email templates for campaigns; introduced Git and formalized repo workflows.

### **JV Media (snob.ru) — HTML/CSS/JS Developer — Aug 2010 — Mar 2011 — Moscow**

- Pixel-perfect cross-browser layout; integration into PHP Zend Framework; jQuery plugins (form validation, image viewer).
- Legacy IE 6–8 adaptations; AJAX comment feed with dynamic content; SVN workflows.

### **PlatZkart LLC — Content Manager / Frontend Developer — Nov 2009 — Jul 2010 — Krasnodar**

- Cross-browser layouts and integration into 1C-Bitrix; content management and basic SEO.
- Maintained client sites; built a Tilda-like site builder; ongoing technical support.

### **Contractstroy LLC — System Administrator — Jan 2008 — Aug 2009 — Krasnodar**

- Administered corporate file server; maintained Ubuntu-based mail server (install/config/backup).
- Implemented internet traffic control (rate limiting, non-work site filtering) and load balancing across two providers.
- Supported office IT infrastructure (~40 workstations and peripherals); maintained 1C:Enterprise 7.7–8.1; corporate website support.

## Education

**Kuban State University** — 2009

Faculty of Theoretical Physics (Engineer)

## Featured Links

- Geospatial platform demo (YouTube): [youtu.be/df4GsBd9a\\_U](https://youtu.be/df4GsBd9a_U)
- GitHub — hello-bot: [github.com/ivan-hilckov/hello-bot](https://github.com/ivan-hilckov/hello-bot)
- GitHub — hello-ai-bot: [github.com/ivan-hilckov/hello-ai-bot](https://github.com/ivan-hilckov/hello-ai-bot)
- GitHub — english-teacher-bot: [github.com/ivan-hilckov/english-teacher-bot](https://github.com/ivan-hilckov/english-teacher-bot)

## Availability & Preferences

- Remote-first; open to hybrid; open to relocation.
- Immediate availability; open to international contract and invoicing.