

Oleksandr Titula-Boichenko

Principal Frontend Engineer

Seattle, WA, USA · banzalik@gmail.com · 646-334-7449 · [linkedin.com/in/banzalik](https://www.linkedin.com/in/banzalik) · github.com/banzalik

SUMMARY

Principal Engineer with **23+ years** architecting mission-critical systems — from Yandex's core UI framework (pioneered BEM, now an industry standard) to Oracle's internal developer platform serving 50+ teams. Most recently built the Spectra v2 UI (3x faster, 99.9% SLI) and oca-proxy, an LLM orchestration platform with multi-model arbitration and MCP integration. Deep expertise in React, TypeScript, full-stack architecture, and AI/LLM tooling — including production on-device AI in the browser (WebGPU, local LLMs, RAG); led distributed teams of 15+ across three continents. Authorized to work in the U.S. · No sponsorship required.

EXPERIENCE

Principal Member of Technical Staff (IC-4) — Staff/Principal Engineer equivalent — Oracle

Remote, Seattle, WA · Jun 2022 – Jun 2026 · 4 yrs

Project: Spectra — Internal Developer Platform for Oracle Cloud Infrastructure (OCI)

- Solely architected and built the Spectra v2 UI from scratch, replacing a legacy read-only interface with a feature-rich management interface in ~3 months.
- Delivered 3x faster UI vs v1 with optimized Core Web Vitals (LCP, CLS, INP); supporting 50+ internal engineering teams.
- Maintained 99.9%+ SLI over 4 years; established code standards and performance monitoring practices; participated in on-call rotations.
- Provided technical leadership as the team scaled from 2 to 7 engineers; owned frontend infrastructure and Kubernetes deployment configuration; established comprehensive Playwright E2E test coverage.
- Leveraged AI-powered coding agents (Claude, GitHub Copilot) to accelerate feature delivery; achieved ~30% faster development cycles.
- Developed MCP servers integrating Spectra tooling with AI/LLM workflows; built Node.js User Profile Service for server-side persistence and cross-team integration.
- Architected oca-proxy — comprehensive LLM orchestration platform featuring multi-prompt execution, model arbitration across Claude/OpenAI, prompt catalog management, and flexible MCP/prompt inlining for advanced routing and decision-making.
- Implemented RFC6902 JSON Patch optimization for User Settings Service; reduced network payload by 60% through delta-only transmission.

Senior Frontend Engineer / Tech Lead — UBS (Swiss investment bank)

Seattle, WA · Feb 2020 – May 2022 · 2 yrs 3 mos

- Rebuilt legacy platform from scratch in React/Redux/TypeScript with WebComponents and React DnD; built accessible components following WCAG guidelines for complex report-generation UI serving VIP banking clients.
- Engineered parameter UI supporting 1000+ interdependent parameters across dozens of widgets with complex validation logic, cross-widget interactions, and conflict detection; implemented nested tables with hierarchical groups and multi-select.
- Managed complex state using Redux Toolkit and JsonPath for efficient querying; implemented frontend + backend validation with business logic; generated valid JSON → Server PDF with live preview.
- Achieved native-app-level performance and responsiveness across browser and iPad (portrait/landscape); optimized rendering performance using DevTools profiling, lazy-loading, and code-splitting; implemented automated regression testing across browser and iPad targets.
- Drove technical vision and excellence for a distributed engineering group of 15+ across the US, Europe, and India; mentored a core team of 5 engineers; established code quality standards, testing strategies, and CI/CD pipelines.

Senior Frontend Engineer / Tech Lead — Getty Images

Kyiv, Ukraine & Seattle, WA · Mar 2015 – Jan 2020 · 4 yrs 10 mos

- Architected and solely built photographer-matching platform for VIP clients with matching algorithm and full frontend; generated tens of thousands of dollars per contract across dozens of active contracts — core revenue driver.
- Refactored complex multi-subsystem media asset management platform spanning Angular 1-2; managed migration complexity with separate codebases; served as primary decision-maker for architecture and technical roadmap.
- Built bulk photo upload system with intelligent retry queue, real-time progress tracking, error recovery; implemented infinite-scroll gallery with performance optimization for hundreds of images.
- Led sub-team of 3 engineers; conducted interviews, established mentoring programs; relocated to Seattle to support distributed team across geographies.

Senior Frontend Developer — Grammarly (now Superhuman)

Kyiv, Ukraine · Sep 2014 – Feb 2015 · 6 mos

- Improved core syntax-highlighting and text-underline engine using Mutation Observers; resolved performance hangs on long texts; implemented WebSocket-based synchronization for cross-device state management.
- Ported Chrome-only rendering engine to IE, Firefox, Opera, Safari, and other contemporary browsers; extensive cross-browser optimization, testing, and performance tuning.
- Optimized widget performance and user experience; automated deployment to Chrome Store, reducing manual deployment from 1-2 days to minutes; wrote comprehensive test coverage.

Senior Frontend Engineer / Tech Lead — Luxoft

Kyiv, Ukraine · Mar 2013 – Sep 2014 · 1 yr 6 mos

- Architected real-time social streaming widget scaled to 1M+ concurrent users using polling architecture with Canvas animations; optimized chat performance at scale.
- Delivered cross-platform trading app (browser & iPad) with D3-powered real-time charts, native-app-level performance.
- Performed load testing up to 1M+ RPS using Yandex Tank; created har2ammo — open-source HAR-to-load-test converter; speaker on Performance Testing (DevChallenge.it) and UI Performance (Odessa.js).

Frontend Engineer — Yandex

Simferopol, Ukraine · Jan 2010 – Mar 2013 · 3 yrs 3 mos

One of the largest tech companies in Eastern Europe · 6000+ employees

- Core contributor to the Lego team — Yandex's internal UI framework used by hundreds of teams and thousands of developers; helped pioneer BEM (Block-Element-Modifier) methodology, now the industry standard for CSS architecture and component design
- Optimized Yandex's ad display widget (banner network) — the company's core revenue driver — fixing cross-site integration issues and improving load speed; achieved ~2–3% CTR increase, generating millions of dollars in additional annual revenue
- Led UI/UX redesigns and new product designs across Yandex's flagship services: Ya.ru social network, Yandex Fotki photo hosting, Yandex News; delivered special-event landing pages for FIFA World Cup, Eurovision, Olympics
- Core contributor to Gemini — a visual regression testing framework with screenshot-based comparison (later succeeded by Hermione); pioneered the concept while the field was nascent, which became the industry standard for visual regression testing
- Developed Yandex's internal Wiki with custom Markdown dialect featuring user tags, task system, calendar integrations, and deep Jira/HR system integration — critical tool across the organization
- Built WYSIWYG site builder for Narod.ru (now Yandex Disk) with drag-and-drop interface; expert in frontend performance optimization (image delivery, CSS selectors, reflow/repaint cycles, network stack); load tested at 100K+ RPS; created imgo — open-source CLI tool for image optimization

Web Department Team Lead / Tech Lead — Media5

Mykolaiv, Ukraine · Nov 2006 – Dec 2009 · 3 yrs 2 mos

Agency serving major brands: Raiffeisen Bank, Sportmaster, and others

- Led front-end team; delivered 50+ corporate website redesigns for well-known brands.
- Created M5 — internal CSS framework used across all agency projects.

Web Developer — TemplateMonster.com

Mykolaiv, Ukraine · Dec 2002 – Nov 2006 · 4 yrs

World's largest web template marketplace

- Customized 1000+ website templates across WordPress, Joomla, OSCommerce, vBulletin, and static HTML.

SKILLS

Core Frontend	JavaScript, TypeScript, React, Next.js, Vite, CSS / Sass / LESS
Specialized Tools & Legacy	D3, WebComponents, React DnD, Chrome Extension API, Angular, Mutation Observers, Infinite Scroll / Virtual Scrolling
State Management	Redux Toolkit (with selectors), Jotai, RxJS
UI & Design Systems	Design Systems Architecture, Component Libraries (MUI, Radix, Shadcn/ui), Tailwind
Architecture & Design	Frontend Architecture, Micro-frontends, System Design, Design Patterns, BEM Methodology, API Design (REST/GraphQL/gRPC), JSON Querying (JsonPath)
AI & Agents	Coding Agents, AI/LLM, MCP Servers / WebMCP, On-Device LLMs (Gemini Nano, Transformers.js), RAG Patterns, Vector Databases
WebGPU & Compute	WebGPU, ONNX Runtime Web, WASM, Canvas API, Web Workers

Backend & Cloud	Node.js, PostgreSQL, MongoDB, MySQL, AWS, Azure, OCI, WebSockets
DevOps & Testing	CI/CD (GitHub Actions, Jenkins), Docker, Kubernetes, Unit/E2E Testing (Jest, Vitest, Playwright), Visual Regression Testing (Gemini/Hermione), Load Testing (Yandex Tank), Make
Leadership	Team Leadership, Mentoring, Technical Hiring, Distributed Teams, Agile / Scrum

CERTIFICATIONS

Model Context Protocol (MCP) — Anthropic · May 2026

AI Fluency: Framework & Foundations — Anthropic · May 2026

Claude Code in Action — Anthropic · Jan 2026

AI PROJECTS & OPEN SOURCE

- **WebMCP in the Browser** — on-device LLM (Gemini Nano) autonomously discovers and invokes in-page tools via client-side WebMCP polyfill; zero backend ([demo](#))
- **On-Device RAG** — fully local RAG in the browser: 57k-chunk vector search in ~12ms via Transformers.js + WebGPU; embeddings compressed 620MB → 194MB ([demo](#))
- **Fully On-Device AI Agents** — autonomous coding agents in the browser: Gemini Nano + WebContainers; agent writes code, compiles with Vite, renders live preview offline ([demo](#))
- **AuraSR** — client-side image super-resolution with 10+ SOTA models (SwinIR, Real-ESRGAN, OmniSR, DAT); WebGPU acceleration, seamless tiling, zero-data-upload architecture ([demo](#))
- **AeroCheck** — privacy-first grammar checker running 100% on-device via native browser AI models; fully offline ([demo](#))
- **Client-Side AI Image Generation** — SD-Turbo text-to-image via WebGPU/ONNX Runtime Web; Web Worker inference at 60 FPS ([demo](#))
- **Local AI Assistant in Chrome** — on-device assistant with client-side RAG over Gemini Nano ([demo](#))
- **FontDetect.local** — font identification from images via Local Font Access API + Tesseract.js OCR, fully local ([demo](#))
- **Open source:** nano-rfc6902 (RFC6902 JSON Patch), imgo, har2ammo · all demos: demo.banzalik.workers.dev

EDUCATION

Master's Degree — Physics & Astronomy

Mykolayiv Sukhomlynsky National University · 2000–2005

LANGUAGES

English · *Fluent*

Ukrainian · *Native*

Russian · *Native*