Simon Korzunov

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I enjoy working on hard engineering challenges that require cross-team collaboration, especially if I can make things run faster and more reliable with Rust and WASM.

Experience

Software Engineer, `Topologic`   Aug 2024 - Aug 2025
Software for design and automation of industrial knitting

- Vector graphics editor to design garment outlines using Rust + egui
- Compiler from vector outline to machine instructions for knitting using Rust + TypeScript
- Physics simulation for yarn topology relaxation, real-time 60fps with 20,000+ nodes/stitches using WASM + Rust
- Control system software for CAN device network using Python
- Domain-specific language to control motors, I/O boards, manifolds in partnership with mechanical engineers
- VM/interpreter for that language with pausing, introspection and REPL support

Technologies: Rust, WASM, WebGL, egui, Python, CANopen, TypeScript

Software Engineer, `Pomelo Inc`   May 2023 - July 2024
FinTech B2C startup: mentoring, technical strategy and roadmap for Web, Mobile and Backend teams

- Design System that works both on React Native and web, deprecated existing react-native-web solution
- Workshops on Rust, React state management, state machines and advanced TypeScript
- Planned, prototyped, scoped and started migration to Rust/GraphQL/Axum on BE from REST/Java stack using BFF architecture
- Planned technical expansion of the product to Mexico

Technologies: Rust, Axum, React, React Native, TypeScript, GraphQL

Software Engineer, `Okta, OktaX incubation program`   Nov 2021 - Feb 2023
IAM Pulse - AWS IAM permission graph analysis and visualization for IAC

- Rust/WASM graph visualization engine
- Layout engine with Taffy, text rendering with SDF, hit test detection for declarative UI framework with vdom
- Custom Terraform language parser and interpreter in Rust

Technologies: Rust, WebGL, WebAssembly

Software Engineer, `Next Music`   Aug 2020 - Feb 2021
React Native and React Web versions of sessionslive.com music streaming app

- Client side technical strategy and architecture
- Workshops on JS performance and React internals
- Reduced app bundle size from 7.5MB to 1.4MB
- Measured TTI and cut it down by 70% on several screens
- Introduced "Over the Air" updates for the mobile app
- Transition to GraphQL on the client

Technologies: TypeScript, React, React Native, GraphQL

Senior Software Engineer, `Dropbox`   Oct 2018 - Apr 2020
Desktop UI Platform - Platform for developing UI using web technologies

- JavaScript build pipeline for new Dropbox desktop app
- JavaScript performance: build time and run time optimizations
- Building and integrating tools to measure performance
- Internal React/Redux/JS/performance consulting and workshops

Technologies: TypeScript, React, Webpack, V8

Senior Software Engineer, `Microsoft` — Jul 2015 - Oct 2018
Internal incubation project
- Internal incubation project - Hackathon project that grew into a 1-year incubation effort: exploring AR applications in office environments (React Native)

Transport for MS 365 Office cloud
- Precise queue delivery scheduling on cloud nodes for emails and other packets
- Hotswap framework for extracting sensitive content

Technologies: TypeScript, React, React Native, Redux, C#, C++

Senior Software Engineer, `EastBanc Technologies` — Oct 2013 - Jun 2015
Washington Area Transit Authority internal automation tools

- Creating and moving existing kiosk and desktop applications to web-based solutions

Technologies: ASP.NET MVC, JavaScript

Senior Software Engineer → Software Lead, `Nival` — Jan 2010 - Sep 2013
Prime World - Dota-like, Role-playing strategy game

- Led small team responsible for building in-game UI framework and content
- Game logic: Pathfinding, AI development using C++
- Reverse engineered Adobe Flash Player ActionScript 3 internal API
- Custom Flash player based on Tamarin virtual machine
- Custom UI framework based on Flash on Unity3d
- In-game chat system based on IRC protocol on top of HTTP

Technologies: C#, C++, ActionScript 3, Unity3d, Flash, Tamarin

Software Engineer, `SoftLab Nsk` — Aug 2009 - Jan 2010
HardTruck 3 - Truck driving simulator game

- Environmental audio support with OpenAL

Technologies: C++, OpenAL, DirectSound, DirectX, COM

Software Engineer, `DataWorks` — Oct 2006 - Aug 2009

- Writing test harness for the rendering engine for reports written in C, which is primarily 13 "goto" 20000 lines function

Technologies: Flex, Flash, ActionScript 3, C#, NAnt, OLAP, C++, COM, ActiveX

Education

`Novosibirsk State University` — Aug 2009 - Jan 2010
Bachelor of Science in Physics — *Novosibirsk, Russia*

- Physic-technical Research Automation Department
- Graduation thesis: «Design of an efficient algorithm for multidimensional data indexing»