

# Simon Korzunov

twop@hey.com | [github.com/twop](https://github.com/twop) | [linkedin.com/in/skorzunov](https://linkedin.com/in/skorzunov)

I enjoy hard engineering challenges that require "mad science", craft and empathy. I love making things run faster with Rust and WASM.

## Experience

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### **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

*ActiveReports - Reporting tools suite*

- 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**

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#### **Novosibirsk State University**

2003 - 2007

Bachelor of Science in Physics

Novosibirsk, Russia

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