# Pavel **Kirin**

C++ Software Engineer

*Ready to relocate*

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## Summary

I am a C++ software engineer seeking relocation opportunities with visa sponsorship.

My expertise lies in designing systems that are not only highly optimized but also maintain an optimal balance between development complexity and clarity. A distinguishing feature of my work is my high attention to readability and comprehensive documentation, which I consistently prioritize.

While my experience predominantly encompasses monolithic system development, I am interested in distributed system architectures and aspire to delve deeper into this domain. I believe my flexibility, quick learning ability, and problem-solving skills empower me to contribute effectively to any project.

Moreover, my approach always includes considering alternative solutions, enabling me to select the most effective one. This fosters my collaborative skills, allowing me to engage seamlessly with teams, make clear proposals, and actively participate in discussions.

## Experience

### TrueConf

*Moscow, Russia / Remote*

C++ backend Developer

*Apr. 2022 - Present*

- Worked on enhancing the chat functionality and refining the codebase of **"TrueConf Server"** and **"TrueConf Enterprise"** products.
- Contributed to product support, encompassing the addition of new features, alterations in the database, and bug fixing.
- Successfully implemented caching for a critical database call, resulting in a **50%** boost in the server throughput.
- Developed and enhanced multiple integration tests, along with the introduction of a significant number of unit tests using the **GoogleTest** framework.
- Developed **Python** automation scripts using the client SDK for stress testing the server and validating the efficiency of new optimization features.
- **Notable technologies used: [C++17], [Boost.ASIO], [GoogleTest], [Python], [SQLite], [PostgreSQL].**

### SoftBuilding

*Saint Petersburg, Russia*

C++ Developer

*Sep. 2021 - Jan. 2022*

- Developed and maintained software for internal use within the company.
- Finalized the legacy C++ parsers with libcurl library.
- Developed the advanced Web Scraper written on TS, working on a headless version of Chrome browser.
- **Notable technologies used: [C++20], [Node.JS], [TS], [.NET], [MS SQL].**

## Skills

**Programming** **[C++20], [Boost.ASIO], [GoogleTest], [Python], [SQL]**

**Soft Skills** Communication, Adaptability, Team Work, Problem-solving, Flexibility, Project management

**Languages** Russian (native), English (B2)

## Publications

### Deletion in the Red-Black tree

*Link: Habr/Deletion in RB-tree*

Explaining how the deletion in the Red-Black tree works.

*Data structures, Algorithms*

## Education

### École 42 / School 21

*Link: 42/Alumni certificate*

Alumni

*Aug. 2020 - Jun. 2023*

- An intensive programming course utilizing a peer-to-peer learning methodology. This environment fostered a deep understanding of programming culture and allowed me to engage in comprehensive projects that honed my technical skills, including a profound appreciation for documentation.
- Improved skills: [C/C++], [STL], [Object-oriented programming], [POSIX API], [Multithreaded programming], [IPC], [Algorithms and optimizations], [Linux], [Git], [Documentation]

# Selected projects

For more info about the next projects, please visit the GitHub pages by the links below.

## webserver

*Link: MosheGroot/webserver21*

Own implementation of webserver (like nginx) with custom configs

*C++98, Sockets, Multiplexing, OOP*

- Solving multiplexing problem with low-level select function.
- HTTP/1.1 requests processing.
- Custom configurations of multiple servers.

## ft_containers

*Link: MosheGroot/ft_containers*

Rewriting of four STL containers + Red-Black tree

*C++98, STL, SFINAE, Data structures*

- Own implementations of vector, stack, map, and set.
- Own implementation of Red-Black tree for map and set containers

## minishell

*Link: LinearBasis/minishell*

Own implementation of the shell with syntax analysis, parsing, and IPC

*C, POSIX API, IPC*

- Readline library for interactive I/O.
- Syntax analyzer for input values.
- Supporting pipes, redirections, and heredoc

## miniRT

*Link: MosheGroot/miniRT*

Mini ray-tracing project

*C, Linear algebra, Multithreading*

- Custom scene file format.
- Supported: sphere, plane, square, triangle, and cylinder.
- See **screenshots** on the project page!