



# Nebojša Koturović

🌐 <https://kotur.me>  
✉ [contact@kotur.me](mailto:contact@kotur.me)  
🐙 <https://github.com/nkoturovic>

🎂 10.10.1995.  
📱 N/A in Digital  
🗣 Serbian, English  
📍 Belgrade, Serbia

## 📁 WORK EXPERIENCE

- **“Tylo”** - C++ Developer, Belgrade, Serbia *September 2021 — Now*

## 🎓 EDUCATION

- **“Faculty of Mathematics”** - Informatics - University of Belgrade, Serbia *exp. 2015 — 2023*
- **High school “Dragačevo”** - Financial technician - Lučani, Serbia *2010 — 2014*
- **Elementary school “Milan Blagojević”** - Lučani, Serbia *2002 — 2010*

## ✅ PROGRAMMING LANGUAGES

C++, C	★★★★★
Rust, Haskell, Zig	★★★★★
Python, Groovy, Java, JS	★★★★★
Nim, Lua, Scala	★★★☆☆

## 🔧 TECHNOLOGIES

Linux, Git, Bash, CMake, Conan, LLVM, SQL, Qt, OpenGL, OpenCV, Nix, Docker, Jenkins CI/CD, Web, HTML/CSS, Angular,  $\LaTeX$ , Markdown, Vim, IntelliJ, VSCode

## 👥 TEAM PROJECTS

**Photowall** - Web platform for sharing digital images consisted of client-side SPA written in Angular framework and secure performant C++ server. I was in charge of developing blazingly fast server-side application written in C++ that includes public REST API, built-in framework for defining data flow, models, constraints, interacting with database and resolving permissions in a generic and reusable way built on top of boost::hana with advanced TMP techniques.

**Technologies:** C++, Hana, Restinio, SQLite, JWT

**Link:** <https://gitlab.com/matfpvbe/projekti/2019-2020/11-photowall>

**Photon** - Application with Qt based GUI where user can apply predefined set of effects to image of choice. My role was developing rs-img library that stands as connecting bridge between front and back end of the application, providing convenient DSL for manipulating images used by end-user. It also provides an easy and modular way for backend implementation in specific framework such as OpenCV or ImageMagick wrapped with PImpl idiom. Besides rs-img, I've created undo functionality, participated in and supervised Qt GUI and OpenCV backend implementation.

**Technologies:** C++, OpenCV, Qt

**Link:** <https://github.com/nkoturovic/RS009-photon>

**Pluton** - Minimal text-based file manager for performing basic task such as file creation, file deletion, navigation, etc. On this project I was designing and implementing text-based user interface with TermOx library, expanding existing widgets with new functionality, participating in development of core/system of file manager engine, exploring immutable data structures with Immer library and combining them with functional style patterns.

**Technologies:** C++, TermOx, Immer, Range-v3

**Link:** <https://github.com/mrdakj/Pluton>

## PERSONAL PROJECTS

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**Ctollvm** - Compiler for subset of C programming language, which can be used to translate C source to native machine code. One of the key features is readable error messages with source code references and traces. It includes lexing, parsing, ast generation, semantical analysis, and code generation phases. It uses GNU tools flex and bison for parsing C source code, a hand-crafted class hierarchy for ast representation, and LLVM library for code generation.

**Technologies:** C++, Flex, Bison, LLVM

**Link:** <https://github.com/nkoturovic/compiler-project>

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**SenseFX** - The program gives an immersive first-person game-like 3D virtual experience. It renders a set of rooms based on the directory structure of the user's physical drive and places him inside it. The user has ability to move between rooms (directories) and interact with 3D objects. Everything is rendered in real-time using OpenGL library.

**Technologies:** C++, OpenGL

**Link:** <https://github.com/nkoturovic/sensefx>

## WORK SKILLS

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- Agile methodology, Scrum and Kanban
- Structured, functional and object-oriented paradigm

## INTERESTS

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- Artificial intelligence, computer simulations
- Volleyball, basketball and other sports activities