
Rastko Tojagić

CV

Software Engineer

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SUMMARY

Software engineer with professional experience in multiple areas of game development and web development. Passionate programmer with interest in both applied and theoretical computer science and math. Loves friendly, relaxed environments.

WORK EXPERIENCE

Hotovo, Remote - Senior Frontend Developer [JS, TS, React, Rollup]

2022 - Present

- Front-end web app development in React - Working on an enterprise project for risk and banking asset management

Fluxon, Remote - Software Engineer [JS, TS, React (NextJS), Firebase]

2021 - 2022

- Front-end web app development in React, Firebase
- Back-end web app development in Node (NestJS)
- Research and development of the Token Bonding Curve for crypto currency based platform

Ubisoft, Belgrade - C++ gameplay and UI programmer [C++, Proprietary engine and tools]

2020 - 2021

- Programming gameplay and UI features in C++ based proprietary engine

Freelance, Remote - Unity Developer [C#, C++, Unity, Unreal Engine]

2018 - Present

- Logos Vision - Programming gameplay and UI in Unity and Unreal Engine
- Cryptic Legends - Programming UI and Client-Server communication in Unity engine for online mobile card game
- BOM Solutions - Developing visual presentations in Unity, Client-Server communication and UI

PROJECTS I AM PROUD OF

ERM and ALM

Enterprise Risk Management and Asset Liability Management softwares developed by The Protecht Group are large scale systems relying on ReactJS for rendering the UI in the web browser. I was involved in developing new and maintaining existing features in both projects and a common ui library shared between them. As a consequence I had to master additional tools such as Rollup and various configurations in order to optimize and properly bundle the ever growing ui-library.

PATHFINDER

This was the first AAA project in the gaming industry that I was involved in and even though it did not come out successful the experience gained was very valuable for me. The game was developed by Ubisoft in the battle royale genre. I was involved with general tasks and bug fixing, related to either gameplay or UI. Primary feature that I was developing and owning was the Tactical Map which was rendered on the UI layer. It was developed using additional proprietary UI tools alongside the standard C++ implementation. This task was particularly interesting because I had to apply math, such as analytical geometry and algebra in order to be able to display the correct position, rotation and scale of objects on the map.

SUPERLAYER SDK AND TAKI PLATFORM

My primary focus on this project was the research and development of the token bonding curve which defines the relationship between the supply and price for virtual currency. I had to calculate the proper curve approximation and write a module in JS in a functional manner that computes various information about the curve, such as the supply, the price for buy / sell and similar. Alongside I was programming standard CRUD operations between the layers of the app using NestJS and PostgreSQL as the SDKs primary tech stack. TAKI, the SDK consumer project, is a crypto based platform for content creators that we have been developing as a proof of concept in ReactJS and Firebase. I was heavily involved with frontend development of TAKI.

EDUCATION

Faculty of Sciences, Novi Sad - *BSc in Computer Science*

2016 - present

Certificate in Advanced English (C1)

INTERESTS AND PERSONAL PROJECTS

I have experience in using different OS, Windows, Mac and Linux (multiple distros). I am enthusiastic about trying out and configuring new IDEs and have experience using Visual Studio, VIM and Emacs.

I am interested in theoretical computer science and math.

CPP MATE

CPP Mate is a Visual Studio plugin I developed for the purpose of better management of C++ source files in large scale projects. In these projects we usually separate the source code from the IDE related files (which are recreatable) in order to not pollute the repository. Visual Studio, at the time of writing this, could not properly render the folder structure and the source files that were not contained under its project definition file directory. This made it impossible to easily add new source files and structure them properly in the folders, thus the solution was to rely on third party tools outside of the Visual Studio (something similar to what UE4 does). CPP Mate integrates seamlessly into Visual Studio and improves source file management.

PROCEDURAL GENERATION

Procedural generation of linear terrains with obstacles in computer games. Application of theory of Automata and Generative grammars. Generating procedural content using left-linear regular language grammar.

MINIMIZATION OF BOOLEAN TERMS

During the elective course I took, called "Boolean algebra and optimization" and as part of improving my skills in functional programming I wrote a parser and a minimizer for complex Boolean terms in Scala.