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🪪 Profile

With a childhood dream of diving into technology, I pursued a career as a software developer. My journey has been fueled by curiosity, critical thinking, and a passion for collaboration. I thrive on teamwork, turning ideas into reality, and am dedicated to delivering excellence in every project I undertake. My expertise includes software design, coding, testing, and deployment, all aimed at creating innovative solutions that meet the needs of clients and users alike.

🧠 Skills

Front-End
Angular, HTML, CSS

Back-End
ASP.NET, PHP, Django, SQL

.NET Desktop
WinUI3, Avalonia, WPF, WinForms

Video / Photo Editing
Adobe

🌍 Languages

Romanian

English

Hungarian

💼 Professional Experience

Junior Software Developer
Yucca ↗

Jun 2024 – present
Remote, Romania

Freelance Software Developer
Self-Employed

Oct 2022 – May 2024
Oradea, Romania

🎓 Education

Bachelor's Degree: Computer Science
University Of Oradea ↗

Oct 2022 – present
Oradea, Romania

Baccalaureate Degree: Economic Technician
Colegiul Tehnic Nr.1 Vadu Crisului

Sep 2018 – May 2022
Vadu Crișului,
Romania

Certificate of Qualification
Economic Technician - Level 4

📁 Projects

F1 Countdown ↗ Nov 2024
JavaScript - AngularJS
- A simple app that shows the next Formula 1 race event.
- Features all session start times and a countdown for them.
- Available on my **github.io** ↗

Maze Runner ↗ Oct 2024
Python - pygame
- Based on a non-biased maze generation algorithm, the game allows the player to navigate through a maze to find the exit.
- The maze contains various items that can help the player.

World Map Generator ↗ May 2024
C# - WinUI3
- Using the **Perlin noise algorithm** it generates realistic looking maps.
- Optimized **parallel** computation for quick generation.
- Can export both the background image and the map object.
- Features a zoomable and scrollable user friendly map viewer.
- Available on the **Microsoft Store** ↗

Memory Vault ↗ May 2024
PHP - Apache Webserver
- A simple website that lets users upload photos as memories both privately and publicly.
- Works together with an ASP.NET Core Web API.

Memory Vault API ↗ May 2024
C# - ASP.NET Core Web API
- Manages the database for the PHP web-server, endpoints have authorization for user roles.

Celestial Defenders ↗ Apr 2024
TypeScript - Angular
- A classic tower defense game.
- Multiple enemies, defenders, projectile types and damage effects with animations.
- Three maps with different difficulty levels.
- Available on my **github.io** ↗

Turing Machine Simulator ↗ Apr 2024
TypeScript - Angular
- A basic single-tape emulation of a Turing Machine
- Implements the single-tape design with intuitive and easy to use UI.
- Available on my **github.io** ↗

Webtris ↗ Mar 2024
TypeScript - Angular
- The classic tetris game made with Angular, includes touchscreen buttons for mobile gameplay and a reactive UI.
- Available on my **github.io** ↗

Personal Website ↗ Jan 2023
TypeScript - Angular
- My **personal website** ↗ showcasing my portfolio.

Primitive Chess ⬈

Dec 2023

C# - WinUI3

- A desktop app that simulates a two-player local chess game.
- Available on the **Microsoft Store** ⬈

2048 Game ⬈

Dec 2023

C# - WinUI3

- Ported from my old **WPF** implementation to the new **WinUI3** framework, it implements the basic 2048 game.
- Available on the **Microsoft Store** ⬈

GraphUI3 ⬈

Oct 2023

C# - WinUI3

- A desktop app based on graph theory.
- Implements a similar design to notepad that allows creating and editing unoriented graphs.
- Implements different visual algorithms on user created graphs.
- Available on the **Microsoft Store** ⬈

OpenTrack Racers ⬈

Jul 2023

C# - WPF

- My 2023 summer project, includes simple track designer with checkpoints and basic UI elements.
- Has multiple car choices with different stats.
- Has some basic enemy AI that you can race against.
- The source-code is private since it's a pretty large project.
- Available on the **Microsoft Store** ⬈

Mandelbrot Visualizer ⬈

May 2023

C# - WPF

- A desktop app that can zoom infinitely into the *Mandelbrot* fractal using a special data type with various configurable options.
- Built-in feature that saves the currently zoomed image.
- Uses **asynchronous** and **parallel** programming concepts to speed up the render time.

High Precision Decimal Datatype

May 2023

C# - Class Library

- A datatype specifically designed for a theoretical infinite precision after the fractional dot.

Maze App ⬈

May 2023

C# - WPF

- A desktop application that generates a maze using Wilson's random walk algorithm.
- Implements a **BFS** pathfinding algorithm that visually shows the path between two points inside the maze.

Circle Clicking Game ⬈

Apr 2023

C# - WPF

- A desktop app that tries to simulate **Osu!** ⬈ beatmaps.
- Uses different **asynchronous** concepts and mathematical functions to load these beatmaps and is built closely following the official game documentation.

Tetris ⧉   Mar 2023
C# - WPF
- A desktop app that simulates the classic **Tetris** game with score and level progression.

Minesweeper Game ⧉   Mar 2023
C# - WinForms
- A simple app that implements a classic game.

Game Of Life ⧉   Jan 2023
C# - WPF
- A desktop app which implements a re-sizeable grid that simulates John Conway's game of life.

Advent Of Code ⧉   Dec 2022 – present
Various Programming Languages
- Solving all Advent Of Code problems.
    - **2015 - C#** ⧉
    - **2016 - PHP / C#** ⧉
    - **2017 - JavaScript / C#** ⧉
    - **2018 - Kotlin / C#** ⧉
    - **2019 - Java / C#** ⧉
    - **2020 - TypeScript** ⧉
    - **2021 - Python** ⧉
    - **2022 - Ruby / C#** ⧉
    - **2023 - C#** ⧉

Wild West Blackjack ⧉   Nov 2022
C# - WPF
- A simple card game that simulates casino rule blackjack and as a working encrypted save file with username and high score.
- Available on the **Microsoft Store** ⧉

📖 Publications

Building cryptographic algorithms in Turing machines. ⧉   2024
ISSN 2066-3250
  In this paper, we propose to **build Turing machines** ⧉ that simulate two simple cryptographic algorithms. Using a basic substitution cipher translated into a Turing machine, we build a more complicated monoalphabetic cipher, the Vigenère cipher, into a single-tape Turing machine.

Generating geographic maps procedurally.   2024
ISSN 2066-3250
  In this article we present an **innovative app for the procedural generation and visualization of 2D maps** ⧉ using Perlin noise. Ideal for game development, simulations and design projects, the application brings a flexible and realistic solution to map creation.

High precision data types for zoom applications. ⧉   2023
ISSN 2066-3250
  In this paper, we propose to build a data type that supports a theoretical infinite amount of precision after the fractional dot. We use this data type in a **Mandelbrot fractal visualizer app** ⧉ to be able to zoom into a small square of 10^{-82} size and beyond to find weird looking patterns.