Radu-Leonard Rîcă

Automatică și Calculatoare, UPB
Licență anul 4

Media pe ultimul an: 9,14

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"   I am a very organized and dedicated student of the Faculty of Automation and Computers. I have been working for my development in this field for about 7 years, I am eager to absorb as much knowledge as possible in the pursuance of my goals, to make new connections with experienced people and to further develop my communication skills. My motto is "Improvise.Adapt.Overcome". "

Aptitudini

design patterns, oop, data structures, communication, embedded, java, python, algorithms, c++, teamwork, c, object oriented design

Limbi străine

Engleza

Pasiuni

Beside programming, I also like to create my own robots and electronics, to watch movies, to listen to music, to play table tennis, to go to the gym and to cook.

Cursuri preferate:

Design of algorithms, Data structures, Numerical Methods, Programming paradigms, Object Oriented Programming, Communication protocols, Introduction to computer organization and assembly language

EDUCAȚIE

2018 - Prezent
Computer Science and Engineering Department of University Politehnica of Bucharest
Specializarea: Computer Science

2014 - 2018
National College "Ion C. Brătianu"
Specializarea: Mathematics - Intensive Informatics

EXPERIENȚĂ

2021 - Prezent
Compiler Software Engineer @ Microchip
Developed custom Bamboo backup mechanism. Developed a high-performance server, a development-boards farm, to test the compilers' releases on actual hardware.

2020
Embedded Software Engineer Intern @ Fitbit
I worked on the ECG application for the Fitbit Sense smartwatch.

2018
Robotics Engineer @ Romascanu Metal Construct SRL
I added automatic angle control at a multiangular band saw using an Arduino Board.

2017-2018
Software engineer @ Contact Electric SRL
I developed a product line monitor that displays live statistics about production.

PROIECTE ȘI ACTIVITĂȚI EXTRAȘCOLARE

2022

Cool Lang Compiler

Implemented a Cool Language compiler in ANTLR. (lexical analysis, parser, semantic analysis, code-generation)

2022

Training Planner

Implemented a web application in NodeJS for training planning. For development I used the ExpressJS framework and the Mongo database with complex map-reduce requests, encapsulated with Docker. For front-end I used React.

2021

Programmable Soldering Station

I made a soldering station using an Arduino Mega, a 1602 LCD, a soldering pen Pensol IRON-N, an IRLB8743PbF mosfet, and a MAX 6675K thermocouple. The graphical interface and the control were programmed in C. The temperature stabilization algorithm was PID, with which I obtained an accuracy of + -1 degree celsius. In the PM Fair competition within the faculty, I obtained the 1st place. https://ocw.cs.pub.ro/courses/pm/prj2021/alazar/programmablesolderingstation

2021

Interpretor Glypho

Implemented a Glypho interpreter in C ++, in the form of a finite automaton.

2021

Distributed Text Procesor

Implemented a distributed text processor in C++ using MPI. Implemented several nodes, each being specialized on one type of processing. The main node distributes the text to these nodes and then reconstructs it.

2020

Roll the Ball

I implemented in Haskell the game known as "Roll the Ball". I took advantage of "lazy evaluation" strategy when searching through the game's state space, meaning computing only states that I must go through in order to win. I used Bi-Directional BFS to solve the game from any given state.

2020
Client-Server Application
The server receives publications from UDP clients. It redirects them via TCP to subscribers. If they are offline, keep the messages, and send them when they reconnect. To delimit the messages on TCP, I created my TcpBroker class, which deals with the delimitation of these, reading non-blocking, until an entire packet is completed.

2020
Bow and Arrow
I developed a 2D game in openGL in which the main player, "Cupid" shoots with a bow. The game consists of levels that vary in difficulty, the player having to break as many balloons as possible and avoid the shurikens or destroy them. The arrow behaves realistically, the gravitational force being implemented. Also, the bow is genuinely curved when used, and the character's hands move accordingly.

2020
Chess Engine
As a team project for college, I and the team developed a chess engine using MiniMax algorithm and XBoard framework in order for it to be played against real people or other chess engines. We used AlphaBeta Pruning and other optimization mechanisms like Black Magic Bitboards, Quiescence, Transposition Tables and Zobrist Hashing.

2019
Simple convertor between camelCase and snake_case
As I prefer to write code in camelCase I made this tool in C++ to easily convert code to snake_case and back.

Link: https://github.com/raduleo19/CamelCase2snake_case

2018

Line Follower

I've been programming for years, I got an idea what electronics is building a little lab in my room (I build a soldering station and a variable bench power supply). So I wanted to start making robots. I began by building a line follower robot. I used an Arduino and I implemented an optimised PID algorithm.

Link: https://github.com/raduleo19/Optimised-Line-Follower

2017-2018

AlgoBoss

I wanted to continue what I started with GraphLearn so I worked on the interface and I added a lot of algorithms and their visual simulation.

Link: https://community.infoeducatie.ro/t/algoboss-educational-arges-lucrari-2018-nationala/4749

2016-2018

Bratianu Scientific Society Member

I published a little article in the fourth issue of the magazine and participated at Romania Science Week, where I presented a 3D printer made by myself, and other educational events.

Link: https://bratianu.science

2016-2017

GraphLearn

I build this application in my free time to help students learn about graphs and algorithms. I made it using C# and it was my first encounter with OOP, databases and threads. Also, I wanted a feedback so I participated at "Infoeducatie", an IT&C contest, where I got an honorable mention.

Link: https://community.infoeducatie.ro/t/graphlearn-educational-arges-lucrari-2017-nationala/4405

2016-2017

3D printing

I saw a 3D printer when I was in a summer camp. It was very interesting so I bought one to create cases for my projects. After using it and upgrading constantly for a year I learned how it is made and I build another one from scratch.
I also helped some friends to build 3D printers.

2014-2018

Local and national contests

I participated at various contests and olympiads at maths, informatics, physics. I also participated at National Olympiad in Informatics in 2017.

2014-2018

Algorithmic problems

During my highschool I solved a lot of algorithmic problems. https://www.infoarena.ro/utilizator/radu.leonardo?action=stats https://csacademy.com/user/Radu.leonardo http://codeforces.com/profile/radu.leonardo