

TIBERIU-ANDREI POPESCU

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Education

University of Bucharest

Pursuing a Bachelor of Computer Science

Current GPA of 3.94/4.00

October 2023 – June 2026 (expected)

Bucharest, Romania

International Computer High School of Constanta

Intensive Mathematics and Computer Science class

Graduated with a GPA of 3.95/4.00

September 2019 – June 2023

Constanta, Romania

Projects

Risc V emulator | C, Python

- Developed a Risc V **assembler** and **emulator** with a **team** of 3 other students, that supports a subset of Risc V instructions
- Responsible for writing the **assembler**, which includes a **lexer**, **parser** and **encoder**
- The encoding is **custom**, **bit addressable** and the codes were calculated with python scripts using the **Huffman algorithm**

Password Manager | C++

- Developed a **secure** command line password manager, that uses well known **cryptography** algorithms, **implemented by hand**, such as **Bcrypt**, **AES256**, **PBKDF2**, **HMAC** and **SHA512**
- The application admits creation of **multiple accounts** for different users that may use the software and stores their **encrypted** data in a local database
- Data for each user is **encrypted** by **deriving a master key** from the user's password that is then used as a key for the **AES256 algorithm**
- The **features** of the application include, and **are not limited to**: **user creation/login/logout**, **user data creation/deletion/search** by different criteria.

Tlang | C++

- Developed a **custom programming language**, with syntax borrowed from JavaScript and C++ languages
- Created **custom lexer module** by implementing a **Deterministic Finite Automaton**
- Wrote a **parser** that takes the tokens that the lexer outputs and creates an **Abstract Syntax Tree** by following the custom built **grammar**
- Implemented an **interpreter module** that walks the AST and interprets it, node by node
- Integrated all of the above modules in a simple to use command line program, that interprets any input file written in Tlang

Web Scraper | Golang

- Developed an **API** that could help me gather useful data about prices of arable land parcels for sale on olx.ro
- Made use of built-in **go routines** to make search queries run **concurrently**, thus scanning hundreds of pages within less than 10 seconds

Awards

- Won **two Silver Medals** (2017, 2020) at the National Competitive Programming Olympiad
- Won a **bronze medal** in 2015 at the National Competitive Programming Olympiad
- Won **second prize** the 2021 edition of National Space Society's **Space Settlement Contest** with a **team** of 11 other students
- Won **3rd place** at The Martine Rothblatt **Space Settlement in Our Lifetime Prize Competiton** with a **team** of 11 other students

Skills

- Programming languages**: Proficient in **C**, **C++**, **JavaScript** and **HTML/CSS**, but also skilled with **Assembly x86**, **Golang**, **TypeScript**, **React**, **Python**, **Java** and **SQL**
- Technologies**: Experienced with **Linux**, **Git CLI**, **JetBrains' IDEs**, **Windows**, **Visual Studio**, **OpenBSD**, **Neovim**, **VS Code**, **SQL Developer**
- Theoretical knowledge**: Good theoretical understanding of **mathematics**, **algorithms** and **data structures**, **automatons** and **formal languages**, **databases**, **cryptography**, **OOP** etc.
- Soft skills and spoken languages**: **Sociable**, excellent **teamwork**, great **communication** skills; fluent in **English** and native in **Romanian**

Extracurriculars

- Participated and **won first place** at the iTec hackathon in Timisoara, Romania, 2019 edition
- Participated at **Smarthack** hackathon in 2023 with a team of 3 other students