

# Andrei Petrea

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## Education

### University POLITEHNICA Bucharest

October 2021 - July 2025

Bachelor of Computer Science

- **Relevant Coursework:** *Databases, Data Structures and Algorithms, Computer Networks, Artificial Intelligence, Programming Paradigms, Algorithm Design and Analysis, Parallel and Distributed Programming, Operating Systems, Computer Architecture, Object Oriented Programming*

### Undergraduate Teaching Assistant

September 2023 - Present

- Teaching students (13-17) in laboratory: **Object Oriented Programming, Programming Paradigms**
- Participated in the **exam** grading and **assignment** creation for Object Oriented Programming course

## Projects

### GuardVPN | React.js, TailWind CSS, Python, Flask, MongoDB, WireGuard, Droplets

December 2023

BEST Engineering Marathon '23

- Developed a **SSO** over WireGuard for securing client's connections from multiple devices by automating the WireGuard Tunnel configuration and deployment
- Designed and deployed a scalable **RESTful API** using **Flask**, making full use of our cloud-based solution
- Implemented a fully responsive website using **Tailwind CSS** and **React**, adhering to best practices

### CyberSecurity Learning Platform | Next.js, TailWind CSS, Express.js, PostgreSQL, Prisma ORM

November 2023

Innovation Labs CyberHack

- Implemented an online platform for interactive **cyber security learning** through **gamifying** the learning experience with fun, hands-on activities
- Utilized **Next.js** in conjunction with **Tailwind CSS** and **Framer Motion** for an engaging and satisfying UI/UX
- Integrated **Auth.js** for easy and seamless user authentication through various providers like Google, X and GitHub, prioritizing user convenience and privacy

### Online Chess Game | React.js, Express.js, Socket.IO, HarperDB, Docker

July 2023

HackITall: 4th Place

- Contributed alongside two colleagues to the development of an online room-based chess app offering the opportunity to play against **AI bots** of varying difficulty or against other **human players**
- Implemented a real-time chat feature using **WebSocket** and **Socket.io**, enhancing user engagement and interactivity
- Deployed the app in a **Docker** container for a fast and streamlined experience in any working environment

### School Management Application | Java, Swing GUI

January 2023

- Developed a comprehensive application in **Java** with **Swing** for **managing student grades**, facilitating **marking, updating, and reviewing**, while also enabling the **seamless generation and distribution of report cards** to students' families
- Utilized a variety of **design patterns**, including **Singleton, Factory, Strategy, Builder, Observer, Visitor**, and **Memento**, in the design of the application

## Extracurricular activities

### Web Programming 101

Hackademy

To-Do List

- Developed a minimalist to-do application using vanilla **HTML, CSS** and **JavaScript**, leveraging **sessionStorage** for data storage, emphasizing lightweight functionality and browser compatibility

### Python Programming 101

Hackademy

Discord Bot

- Engineered a versatile Discord bot to **automate** server tasks, enabling music playback through the **YouTube API** or MP3 files, demonstrating proficiency in **asynchronous programming** and **API integration**

### CCNA1 & CCNA2

Hackademy

## Technical Skills

### Languages:

- Intermediate Knowledge: **C, C++, Java, JavaScript, TypeScript, HTML, CSS, Python, Bash**
- Basic Knowledge: **C#, Haskell, Lisp, x86 Assembly, MATLAB**

**Technologies:** Makefile, Linux, Git, React.js, Docker, Tailwind CSS, Flask, Node.js, Express.js, MongoDB, SQL