

# Eduard Adrian Lupu

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## EDUCATION

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### Babes-Bolyai University

Bachelor's Degree in Computer Science

Cluj-Napoca, Romania

Sep 2021 - Jun 2024 (expected)

### Nicu-Gane National College

Mathematics and Informatics section — Informatics's bacallaureat grade: 10/10

Falticeni, Romania

Sep 2017 - Jun 2021

## WORK EXPERIENCE

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### Bitdefender

Junior Software Developer

Cluj-Napoca, Romania

Feb 2022 - Jun 2022

- Used **C**, **C++** and **Win32 API** to create different tasks (e.g. detection of malicious files, automatic deletion of infected files) and to develop efficient functionalities using processes, threads and synchronization mechanisms (e.g. critical section, semaphores).
- Simulated different attacks and exploits (e.g. buffer overflow vulnerabilities, DLL hijacking, return-oriented programming) and learned how to prevent them.
- Created a client-server application that lets the user select the inter-process communication mechanism (sockets, named pipe, shared memory). The application implements functionalities of a messenger (e.g. send messages, send files).

## SKILLS

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- **Relevant courses:** Object-Oriented Programming, Data Structures and Algorithms, Computer Networks, Databases, Operating Systems, Computer Systems Architecture, Graph Algorithms, Advanced Programming Method.
- **Languages:** Java, C/C++, Python, SQL, JavaScript, HTML, CSS.
- **Frameworks & libraries:** Spring Boot, Spring Data JPA, Qt, Win32 API
- **Tools:** AWS, Git/GitHub, Shell/Bash, MySQL, Microsoft SQL Server, Linux, Windows, Visual Studio Code
- **IDEs:** IntelliJ IDEA Ultimate, Visual Studio 2022, PyCharm

## PROJECTS

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### Tourism RESTful API

- Created a back-end **RESTful API** using **Java**, **Spring Boot**, **Spring Boot MVC**, **JPA**, **Hibernate** and **MySQL**.
- The application provides **CRUD** functionalities for Tourists, Countries, Visits, Cities, Languages but also different statistics. Used only **ORMs** for relations between entities and **JPQL** for statistics.

### Gomoku

- Created a Gomoku game using **Python**, **Pygame** and **Numpy**. The player has the option to choose between a graphical user interface or a console based interface and also between a competitive AI or a AI based on randomness.
- Used concepts in the development of the game: **layered architecture**, **object-oriented programming**, **test-driven development** with **PyUnit** testing.

### Social Platform

- Created a **GUI-based** desktop application using **C++** and **Qt** framework that uses a local repository, based on files, to simulate a Social Platform. The application starts for every user in the repository, it shows relevant posts based on the subscriptions of the user and allows users to post their status.
- The application uses **layered architecture**, **object-oriented programming** and **design patterns** (e.g. observer).

### Commercial Airplanes Crashes

- Created a web-scraper in **Python** using **BeautifulSoup** and **Requests** libraries. The program scrapes data from wikipedia's page: [list of accidents involving commercial aircraft](#).
- The program creates a new database in Excel format and calculates some statistics (e.g. total number of accidents, accidents by days of the week, accidents by seasons) that were used in academic research.