

Gabriel Ignat

Location: Iași, România

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ABOUT ME

I recently graduated in Computer Science and am excited to use my skills in a professional job. I love solving tough problems and always want to learn more. I enjoy working with others and look forward to being part of projects that make a big difference.

EDUCATION

Universitatea "Alexandru Ioan Cuza"

Iași, România

Bachelor in Computer Science

Sep. 2021 – July 2024

- Relevant courses: OOP, Databases, Operating Systems, Web Technologies, Software Engineering, Advanced Programming, Graph Algorithms, Data Structures & Algorithms, Multiprocessor Programming Techniques, Machine Learning, Artificial Intelligence, Embedded Systems, Computer Networks, Cryptography.
- GPA: 9.54/10; BSc Thesis: 10/10.

Colegiul National "Cuza Vodă"

Huși, România

Sep. 2017 – July 2021

- GPA: 10/10; Baccalaureate: 9.91/10.

TECHNICAL SKILLS

Languages : Romanian (native), English (fluent), French (beginner)

Programming Languages: Java, Python, C/C++, PHP, SQL, JavaScript, HTML/CSS, R, Rust, Dart

Frameworks : Java Spring, Flutter

Developer Tools : Git, IntelliJ, Maven, PostMan, Linux

EXPERIENCE

BSA - Software Engineer Intern

July 2022 – Sep. 2022

Vitesco Technologies

Iași, România

- Introduction to basic electronics, microcontrollers and AUTOSar.
- Created PTU files and used IBM Rational Test RealTime for unit testing and code coverage.

BACHELOR THESIS

Graph Isomorphism Algorithms

Java, Swing, JUnit, Git, [Graph4J](#) | Graph Theory

[Repository](#)

- Faced with the challenge of tackling one of the most difficult problems in Graph Theory, the **Graph Isomorphism Problem**.
- My goal was to conduct intensive research on this problem and implement efficient algorithms that could be integrated into an **open-source** library to benefit other developers.
- I researched and implemented non-trivial algorithms, such as **VF2** for general graphs and **AHU** for trees. These algorithms were then integrated into the **Graph4J** open-source graph library. To make the algorithms easy to test, I developed a Java **Swing** GUI that allowed users to easily create, edit and test graphs for isomorphism. Implemented a parser for the well-known Graph Data Format (**GDF**) to enable seamless import and export of graphs within the GUI app. I also performed a thorough **performance** comparison with similar algorithms from other well-known graph libraries, including **JGraptT** and **NetworkX**.
- The algorithms demonstrated **superior** efficiency in both time and space complexity compared to existing implementations. This project not only added value to the **open-source** community, but also resulted in a **well-researched thesis** that serves as a strong academic foundation for understanding and addressing the Graph Isomorphism Problem.

OTHER PROJECTS

Fruits on The Web	<i>PHP, JWT, HTML, CSS, JavaScript, XAMPP, T-SQL, Azure</i>	Repository Demo
<ul style="list-style-type: none">• Collaborated in a team of 3 for developing an educational WEB app for children to learn the fruits and practice their math.• I designed a secure REST API backend from scratch (we were not allowed to use any frameworks) to handle requests, implementing JWT for user authentication and authorization• Frontend contribution: Developed features for user profile management, a leaderboard to track progress, and an RSS Feed for dynamic content updates.• Backend contribution: Implemented key functionalities including user registration, login/logout processes, profile management, leaderboard tracking, quiz question handling, and RSS Feed integration.		
NeuroApp	<i>Java, Spring Boot, Azure, T-SQL, Git Scrum</i>	Repository Demo
<ul style="list-style-type: none">• As part of a team of over 20, we developed an educational application designed to enhance the learning experience for students while providing professors with a robust platform to manage course materials and assessments.• I played a key role in designing the database schema, where I created and modeled the necessary relationships between entities (e.g., students, professors, quizzes, questions) to support the application's functionality.• Additionally, I was responsible for developing REST API endpoints for key features related to quizzes and exams, including creation, modification, random mock exam generation, and score computation.		
FeedbackHHC	<i>Python, scikit-learn, PostgreSQL, Streamlit</i>	Repository Demo
<ul style="list-style-type: none">• As part of a team of 5 in the Artificial Intelligence course, we developed an application that analyzes patient feedback for home healthcare agencies and predicts ratings for new agencies based on specific properties.• I was involved in data preprocessing stages, including data cleanup and feature selection. Additionally, I developed the web page for rating predictions and integrated it with our pre-trained machine learning models.• Our project won the Learn & Earn competition organized by Amazon.		
Other projects	<i>C/C++, TCP/IP, Python, Dart, Flutter, Python, Blender</i>	
<ul style="list-style-type: none">• Electron, RegisterS, Spam Email Classification, Morse Code Flash, 3D Animation		