Gabriel Ignat

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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

EPAM Systems Romania - Training Course — România

Nov. 2024 – (expected) March 2025

- Course: Java Fundamentals.
- Topics include: OOP, Design Patterns, Data Formats (JSON - Jackson, XML - JAXB), Build tools (Maven), Unit testing (JUnit5, Mockito), Clean code principles, RESTful APIs, Java Persistence, Spring.

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, VScode, 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.

Bacheloor 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 *PHP, JWT, HTML, CSS, JavaScript, XAMPP, T-SQL, Azure* Repository | Demo

- 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 template 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 *Java, Spring Boot, Azure, T-SQL, Git | Scrum* Repository | Demo

- 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 *Python, scikit-learn, PostgreSQL, Streamlit* Repository | Demo

- 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 *C/C++, TCP/IP, Python, Dart, Flutter, Python, Blender*

- Electron, RegisterS, Spam Email Classification, Morse Code Flash, 3D Animation