

# Alexandru Aioanei

Nijmegen, Netherlands

0040741433919 | [alexandru.aioanei@ru.nl](mailto:alexandru.aioanei@ru.nl) | [alex03aioanei@gmail.com](mailto:alex03aioanei@gmail.com) |  
[linkedin.com/in/alexandru-aioanei-7a8370255](https://www.linkedin.com/in/alexandru-aioanei-7a8370255) | [github.com/AlexandruAioanei](https://github.com/AlexandruAioanei)

## EDUCATION

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### Radboud University

*Bachelor of Computing Science,*

*Specialization in Cybersecurity and Data Science,*

*Minor in Business Administration for Computing Science*

Nijmegen, NL

*Sep. 2022 – Present (Expected Jun. 2025)*

## EXPERIENCE

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### Software Engineer

*Gip House Student Company*

*Contributions*

Jan. 2025 – Present

*Nijmegen, NL*

- Developing a SaaS web application for KLIC Genius using Angular and TypeScript.
- Integrating ArcGIS for spatial data visualization and interactive mapping.
- Implementing modular and scalable software components for long-term maintainability.

### Student Assistant

*Radboud University*

*Courses Assisted: Imperative Programming, Object-Oriented Programming, Logic and Application, Information Modeling and Databases (IMDB), Operating System Security*

*Contributions*

Sep. 2024 – Present

*Nijmegen, NL*

- Assisted students during tutorial sessions with programming assignments, debugging, and conceptual understanding.
- Led plenary sessions to explain key topics, review exercises, and address student questions.
- Supported course instructors by preparing and reviewing tutorial materials and exercises.

*Course-Specific Contributions*

- **Imperative Programming (C++):** Covered programming fundamentals, complexity analysis, sorting algorithms, memory management, and pointers.
- **Object-Oriented Programming (Java):** Taught class design, inheritance, polymorphism, and encapsulation.
- **Logic and Application:** Assisted students with Coq proofs, formal logic reasoning, and theorem proving.
- **Information Modeling and Databases (IMDB):** Guided students in database schema design, SQL querying, and normalization.
- **Operating System Security:** Provided support on Linux security concepts, access control, and secure programming practices.

## PROJECTS

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### **Infineon C166 Processor Support in Rizin** | *C, Reverse Engineering*

Mar. 2025 – Present

- Contributing to the open-source reverse engineering framework Rizin by implementing support for the Infineon C166 microcontroller architecture.
- Developing disassembly and analysis capabilities to enhance Rizin's functionality for embedded systems.
- Collaborating with the Rizin community to integrate and refine processor support, ensuring code quality and adherence to project standards.

### **Thesis: Comparative Analysis of Cortex-M4 and Cortex-M33 Microcontrollers** | *PyOCD* Feb. 2025 – Present

- Conducting a detailed comparison of ARM Cortex-M4 and Cortex-M33 architectures, focusing on performance, security (TrustZone), and power efficiency.
- Developing and benchmarking assembly routines to measure instruction execution times on Cortex-M4 and Cortex-M33.
- Using PyOCD and Python-based tools for flashing, debugging, and profiling execution cycles on STM32F407.
- Analyzing security features such as ARM TrustZone and their impact on embedded security applications.
- For additional projects and contributions, visit my GitHub: [github.com/AlexandruAioanei](https://github.com/AlexandruAioanei).

## TECHNICAL SKILLS

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**Languages:** C/C++, Java, Python, SQL, Haskell

**Web Technologies:** HTML, CSS, JavaScript, Typescript, REST API

**Mobile Development:** Android Studio, Kotlin

**Frameworks:** React, Node.js, Angular, WordPress

**Developer Tools:** Git, Docker, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse

**Libraries:** pandas, NumPy, Matplotlib **Other:** RESTful Services, Firebase, Postman

## LANGUAGES

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**English:** Professional Proficiency (IELTS C1)

**Romanian:** Native

**Italian:** Native

## MISCELLANEOUS

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**ON2IT Hacker Talent Event — 1st Place:** Participated and secured first place in a cybersecurity competition organized by ON2IT. Demonstrated skills in ethical hacking, vulnerability exploitation, and logic challenges.

*Date: April 9, 2025 — Zaltbommel, Gelderland*

**HTB University CTF 2024 — Binary Badlands:** Competed with the Radboud University team in a capture-the-flag competition focused on binary exploitation, reverse engineering, and web security. Achieved 12th place out of 100 teams.

*Date: December 15, 2024*

**Nymacon CTF — Nijmegen:** Participated in an on-site capture-the-flag event, solving challenges in networking, web exploitation and cryptography.

*Date: November 8, 2024 — Nijmegen*

**Currently pursuing the "Hack The Box" Bug Bounty Hunter path:** Gaining hands-on experience in web application security, vulnerability identification, exploitation, and vendor communication.

**Driving License:** Full (Category B)