Ioan Dragomir

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Bd. Paul Teodorescu, Bucharest / Observator Student Complex, Cluj-Napoca

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Proficient developer and sysadmin with a great passion for **low-level systems** and **interdisciplinary engineering**. With over 10 years of non-formal programming experience and 5 years of **Capture The Flag** contest participation, I have greatly developed my understanding of high- and low-level, software and hardware systems, learning both how to design and reverse engineer them, as well as how to efficiently make use of available community tools and scripting languages to automate my workflow. I also enjoy web development and have been building web apps using various technologies ever since I learned programming. **Main skills and interests:**

– Proficiency in Python, C, MATLAB, and Web technologies. Competence in VHDL, C++, Java, and a basic understanding of multiple other programming paradigms. Attention to secure programming practices and producing clean, maintainable code.

– Understanding of low-level computer systems: assembly language, OS internals, various CPU architectures, FPGA design, high- and low-level emulation, low-level optimizations. Interest in computer networking, especially lower layers, and SDR.

– Familiarity with modern software and firmware reverse engineering practices and tools: IDA, Ghidra, x64dbg.

– Technical writing, presentation, and teaching skills. Writing quality documentation.

– Facilitation of effective meetings, knowledge transfer, conflict resolution, integration, and other soft skills.

– Fundamental digital design, electronics, digital signal processing, and control theory knowledge.

Work Experience

Digilent Ro — R&D Intern   Jul 2022 – Sep 2022

After finishing the 2022 edition of the Digilent Digital Design Club, I pursued this internship where I got to collaborate with a diverse team on testing hardware, upgrading and restructuring Vivado, Vitis, Petalinux projects running on various FPGA development boards.

Bitdefender — Junior Security Researcher   Jul 2021 – Sep 2021

Worked as part of the Active Threat Control team:
– Wrote malware detection heuristics that run in both user-space and the Windows kernel-space
– Contributed to the internal ATC framework
– Monitored current malware behavior trends
– Better familiarized myself with programming in a team, learning jira, git, and the code review process

Competitions

– **NSUCRYPTO** International Olympiad in Cryptography: 2020 (10th individual, silver; 8th team, silver), 2021 (3rd individual, bronze; 5th team, silver), 2022 (2nd team, gold)

– **DEF CON CTF Finals**: 2021 (8th place), team PTB_WTL

– **Hack-A-Sat Qualifiers**: 2020 (14th place), 2021 (8th place), team OneSmallHackForMan

– **European Cyber Security Challenge**: 2019 (1st place), team Romania

– **National Olympiad in Informatics**: 2012 (silver), 2013, 2014 (bronze), 2015 (silver), 2016 (bronze), 2019

Education

Technical University of Cluj-Napoca — Bachelor's Degree   Oct 2020 – Jul 2024

Systems Engineering, Automation and Applied Informatics

Volunteering & Projects

BEST Cluj-Napoca Oct 2021 - Present

As an internationally- and locally-involved member of this European students' organisation, I have developed both hard and soft skills by participating in high-quality training sessions. These have greatly increased my understanding of various workplace dynamics and as such have boosted my ability to adapt to them. Relevant positions I took include:

IT responsible for *BattleLab Robotica 2023*. Developed a PHP 8 + React scoreboard app and revamped the competiton's livestream using web overlays for complex animations. Upgraded a severely out of date Wordpress instance and maintained it afterwards.

Participants, **international**, and **IT responsible** for *Romanian JAM 2022*. Developed a payment system based on NFC bracelets, used via a web app based on Flask and React.

Academic responsible for our *BEST Course in Summer 2022* on autonomous rovers. Collaborated with university professors and company representatives to plan and deliver workshops. Designed and built the hardware platform (a WiFi-enabled electric rover) and software examples as starting points for the students' work.

Banat IT — CTF organizer Aug 2019 – Jan 2020

Organized the *HackTM CTF Qualifiers* cyber security contest:
– Managed an online scoreboard platform for the contest, built on the LEMP stack
– Used docker to securely set up and orchestrate task servers which the competitors had to hack into,
– Designed and built reverse engineering and binary exploitation exercises, automating many parts of the workflow using Python,
– Grew the event's community on social media,
all leading to a flawless qualification round with 747 participating international teams.

Security Espresso — `jmp 0xc0ffee` organizer Jan 2019 – Jun 2019

Organized a weekly cyber security club in affiliation with Security Espresso and Orange FAB. Taught an introductory course in basic reverse engineering, binary exploitation, and network forensics, taking the form of both presentations, hands-on workshops, and CTF participation.

Creative Motion — Full Stack Developer Nov 2017 – Jun 2018

– Maintained company email, DNS, development servers for internal projects, and the public-facing web server.
– Implemented the 2018 website using vanilla HTML, CSS, JS.