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WORK EXPERIENCE

Teaching Assistant in Information Security

ETH Zurich

September - December 2024 Zurich

- Creating, testing, and evaluating graded assignments involving the usage of TEEs (Trusted Execution Environments)

Software Engineering Intern

Daedalean

July - December 2023 Zurich

- Worked on driver code for Vyper (Daedalean's custom OS to be deployed on self-piloting aircrafts)
- Extended QEMU to enable emulation of various FPGA components

Software Engineering Intern

Meta

Summer 2022 London

- Worked on fashion-related problems with direct applications in commerce and ads, using different ML models, as part of the AI Creative team

Software Engineering Intern

Zergrush SRL

Summer 2021 Bucharest

- Developed a VPN provider app and an email server, and integrated them within two separate WHMCS modules

PROJECTS

Custom Operating System

Advanced Operating System Project

2024 ETH Zurich

- Built a custom micro-kernel operating system (including physical/virtual memory management, inter process communication, process management, networking stack etc.) based on Barrelfish

Side Channel Attacks Analysis on Apple M1

Semester Research Project

2023 EPFL Lausanne

- Investigated potential side-channel causes on Apple Silicon M1 for instructions with data-dependent timing
- Identified integer division instructions (UDIV and SDIV) as potential targets, and confirmed that the rest of the ISA is not vulnerable

ROP Buffer Overflow Exploitation Tool for RISC-V

Bachelor Thesis

2022 University of Bucharest

- Created a tool for exploiting memory vulnerabilities in RISC-V binaries using ROP (Return Oriented Programming)
- Used the tool to scan libc and then built a compiler from Brainfuck to RISC-V ROP chains proving that ROP under RISC-V can form a Turing Complete language

EDUCATION

MSc in Cybersecurity

ETH Zurich

September 2022 - Present

MSc in Cybersecurity - Exchange Semester

EPFL Lausanne

Spring 2023

Bachelor of Computer Science

University of Bucharest

October 2019 - July 2022

HIGHLIGHTS & SKILLS

- Data Structures and Algorithms
- Computer Architecture
- AssemblyIntel-x86ARMRISC-V
- OSLinuxGit
- C/C++Python
- JavaScriptTypeScriptReact
- Node.js
- Database DesignSQL
- Web and Systems security (CTFs)
- Applied Cryptography
- Reverse EngineeringForensics
- Networking Protocols

ACHIEVEMENTS

Bronze Medal

National Olympiad in Informatics

2017, 2018, 2019

Scientific Committee Member

International Olympiad in Informatics in Teams (IOIT)

2021

Scientific Committee Member

MatInfoUB - admission contest organized by the University of Bucharest

2024