IOAN ALEXANDRU ȚIFUI

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WORK EXPERIENCE

Teaching Assistant in Information Security
ETH Zürich

📅 September - December 2024 📍 Zürich

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

Software Engineering Intern
Daedalean AI

📅 July - December 2023 📍 Zürich

- 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 Zürich

- 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 Zürich

📅 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
Assembly   Intel-x86   ARM   RISC-V
OS   Linux   Git
C/C++   Python
JavaScript   TypeScript   React
Node.js
Database Design   SQL
Web and Systems security (CTFs)
Applied Cryptography
Reverse Engineering   Forensics
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
MateInfoUB - Admission contest organized by the University of Bucharest

📅 2024