VLAD-MIHAI TOMOIAGA

Electronics engineering student

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PROFILE INFO

Electronics engineering student, interested in working with embedded systems, microcontroller and FPGA applications as well as analog electronics.

EXPERIENCE

2024 - HARD & SOFT International Contest, Suceava

2nd place

- I worked with three other colleagues on a smart-home solution regarding secure access into the parking space and energy and lighting management. I was in charge of developing the hardware and firmware around a Beaglebone computer and an RP2040 microcontroller and integrating them with the other systems.

2021 - Science on Stage International Code League competition

1st place

- I worked on implementing an Internet-connected air quality monitoring system. I was in charge of developing the firmware for the measuring device, as well as managing the database and Linux server hosting it.

Personal projects

- *toymcu*, a custom microcontroller design, written in Verilog,
  - I have implemented a 16bit CPU core alongside matching peripherals (UART, timer, general purpose I/O and an interrupt controller)
  - I have developed a coresponding assembler, in C
  - The sources and documentation for this project are available in my Github account: https://github.com/tvlad1234/toymcu

- *pico-rv32ima* and *linux-ch32v003*
  - I have ported an open-source RISC-V emulator to the RP2040 and CH32V003 microcontrollers, as a challenge to run Linux on constrained platforms
  - The sources and documentation for these projects are published on Github
    - https://github.com/tvlad1234/pico-rv32ima
    - https://github.com/tvlad1234/linux-ch32v003

- *osillyscope*, a low-cost digital, pocket-sized oscilloscope
  - I have designed a low-cost, pocket-sized oscilloscope around the CH32V003 microcontroller.
  - Shortly after publishing this project on Github, I was approached by PCBWay, who offered to sponsor the project with PCB fabrication.
  - The hardware design, firmware sources and documentation are available on Github: https://github.com/tvlad1234/osillyscope

- Developed and ported various C libraries to RP2040 and STM32 platforms

EDUCATION

2022 - present

Electronics engineering student

Faculty of Electronics, Telecommunications and Information Technology at the Technical University of Cluj-Napoca, will graduate in 2026

2019 - 2022

High school diploma

Liceul de Informatică „Tiberiu Popoviciu”, Cluj-Napoca

SKILLS

- Embedded C/C++ programming
- Verilog and VHDL digital hardware design
- Linux system management
- PCB design/assembly
- SMD soldering

LANGUAGES

- Romanian
- English