NORBERT MORAWSKI

Embedded software enthusiast / engineer

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EXPERIENCE

Content Editor
Tutor Maurycy Gast

📅 Oct 2021 - Nov 2022 (part time)   📍 Remote

- Edited IT-oriented school textbook for zpe.gov.pl,
- Revised existing texts and code fragments, leader of QA team,
- Responsible for training new employees.

Java Developer
Jotafan Andrzej Zagórski

📅 Sep 2018 (internship)   📍 Kraków

- Soldering & testing hardware modules,
- Developing Android application - MODBUS Bluetooth controller.

PROJECTS

Full portfolio with broader descriptions, GitHub links and photos available at `mrwski.eu/projects`.

RGB LEDs 4.0
ESP8266 Wi-Fi LED controller / C++

- Product designed based on shortcomings of previous versions,
- PCB professionally manufactured by JLCPCB,
- Currently 6 deployed modules around the house.

RISC-V processor survey
iCE40 FPGA / Verilog, C

- Run PicoRV32 and VexRiscV, measured Dhrystone scores,
- Got involved in open-source development of the `pico-ice-sdk`.

Pico Radio
RP2040 Internet radio / C++, KiCad

- Built-in stereo speakers with 2x3W amplifier,
- Designed schematic, PCB and 3D-printed enclosure,
- Multicore architecture, 2nd core used for MP3 decoding,

6502-based computer
DE10-Lite FPGA / Verilog, Assembly, Python

- Functional 6502 processor written in Verilog,
- UART-based debug interface for automated tests,
- PS/2 keyboard, VGA graphics,
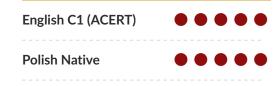- A reiteration of my previous project of a WDC 65C02 breadboard computer (with TTL-based VGA and PS/2 controllers).

SKILLS

Embedded   FPGA   Linux

C/C++   Bash   Verilog   Python
SQL   Web   Java

Git/GitHub   Make/CMake   CLion
FreeRTOS   OpenOCD   LaTeX
Markdown

Logic analyzer   Oscilloscope
Soldering iron   KiCad   3D print

LANGUAGES

English C1 (ACERT)   ●●●●●

Polish Native   ●●●●●

EDUCATION

M.Sc. in Information Technology
AGH University

📅 2024 - July 2025 (ongoing)

Thesis: Enhancing signal processing for on-device machine learning with auto-generated RISC-V cores

B.Sc. in Information Technology
AGH University

📅 2020 - 2024

Thesis: Receiver of Internet radio stations

Upper Secondary School
Zespół Szkół Łączności w Krakowie

📅 2016 - 2020

IT Technician