Patryk Mielech
Junior Embedded Developer

I have finished my education at WUT with the graduation in Electrical Engineering. Previous experience has allowed me to grow as an Engineer of embedded systems in fields of HMI, microcontroller software application and hardware. I am currently looking for a position that would allow me to develop new embedded solutions with my skills.

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WORK EXPERIENCE

Junior Embedded Software Developer
IFS Polska Sp. z o. o.

03/2022 - 12/2023 *Pruszków, Mazovia*
[R&D] Development and integration of battery storage systems - covers battery management system design, power converters and laboratory testing.

Achievements/Tasks

- Added new features and debugged multiple issues in the microcontroller RTOS application, resulting in a decrease in system downtime and an increase in recognition of the faulty boards,
- Responsible for the development and bug fixes of the Battery Diagnostic Application. Improved application stability and communication performance,
- Responsible for the application development and bug fixes of the Discharge Control Application. The app allows the integrator to control a group of microcontrollers. Utilized the OOP concept and Rest API,
- Enhanced developer productivity by developing Python scripts for testing peripherals of the BMS microcontroller, ensuring reliable data storage and streamlined testing processes,
- Enhanced firmware updater script, resulting in a decrease in bus-type errors and increase in stability during the update process, ensuring more reliable product performance and higher customer satisfaction.

EDUCATION

Master of Electrical Engineering
Warsaw University of Technology

02/2023 - Present
Specialty

- Embedded Systems
- STM32, Python, DSP, RTOS

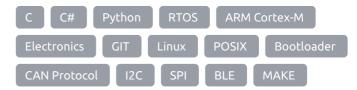### Inżynier of Electrical Engineering
Warsaw University of Technology

10/2019 - 02/2023
Specialty

- Embedded Systems
- PCB Design, Matlab, FPGA, ESP32

SKILLS

`C` `C#` `Python` `RTOS` `ARM Cortex-M` `Electronics` `GIT` `Linux` `POSIX` `Bootloader` `CAN Protocol` `I2C` `SPI` `BLE` `MAKE`

PERSONAL PROJECTS

Thesis of the Diploma
- Rectifying Antenna as the Entropy Source for Random Number Generator on STM32 Microcontroller,
- Developed an STM32 software application to gather the time strict impulse values,
- Developed a Python script to test the effectiveness of the rectifying antenna as an entropy source,

NRF Low Energy
- Developed portable measurement device monitoring various parameters of human life,
- Developed nrf52840 software application utilizing the ZephyrOS framework and ported the PCF8563 RTC sensor library,
- Implemented BLE communication with specific GATT characteristics and write/read options,
- Successfully achieved a current consumption of 700 uA during the sleep phase.

CPU Usage Tracker
- Developed an CLI application to view current CPU usage,
- Utilized the POSIX libraries available in the C programming language, such as Pthread and Ncurses. MAKE and CMAKE files have been written to easily build the project,
- Program workflow is based on sequential threads.

ACHIEVEMENTS

Engineer 4 Science 2023 Best Thesis Competition Award
Honorable Mention for Rectifying Antenna as the Entropy Source for Random Number Generator on STM32 Microcontroller

LANGUAGES

Polish
Native or Bilingual Proficiency

English - B2
Professional Working Proficiency

INTERESTS

`Electronics` `Guitar`