Amsterdam
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Marios Pakas

github.com/Mavioux
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Skills

- Languages: C, C++, Bash, Verilog, Python, Javascript
- Technologies: ZephyrOS, FreeRTOS, AWS, ARM, RISC-V
- Developer Tools: Git, Jenkins, Jira, AWS, Docker

Experience

Embedded Software Engineer **Sensorfy** **September 2023 - Present**
Eindhoven, The Netherlands

- Integrated the software using ZephyrOS to support the new hardware of a waste management access controller
- Fixed and improved the CI tests (Jenkins, Python, Pytest) to unblock PRs, increase productivity, and keep the pipeline functional for fast and secure releases
- Used AWS IoT and AWS Lambda functions to implement a remote open functionality
- Investigated issues on the modem and the RFID chip, fixing memory leaks and fine-tuning hardware configuration, to solve on-field stability problems
- Implemented a watchdog to monitor the application and increase uptime and stability by 200%
- Integrated an ADC to measure current consumption
- Documented the software architecture and proposed improvements to support future development
- Developed software using ZephyrOS (C++), STM32 (C), and Protocol Buffers to deliver a demonstrator of a chemical sensing safety device
- Developed in-house drivers for a STM32 accelerometer and motion sensor on I2C bus to improve the sensing accuracy of a railway vibration monitor system

Software Developer and IT support, Military Service **Hellenic Airforce** **November 2022 – August 2023**
Larissa, Greece

- Developed a full-stack web application (NodeJS, React, MySQL) to track flights and draw mission areas on a map
- Obtained top secret security clearance and provided IT support for the internal network of the military camp

Embedded Software Engineer, Internship **Net2Grid** **March 2022 – May 2022**
Thessaloniki, Greece

- Ported 4 appliance energy neural network prediction models from Tensorflow to Tensorflow Lite and Micro, optimizing the models for energy efficiency, memory footprint and speed, to run on Raspberry Pi and ESP32
- Developed unit tests for the embedded library to improve the code quality, debugging, and reliability

NanoSatellite SW/HW Engineer, Student Team **SpaceDot** **April 2021 – March 2022**
Thessaloniki, Greece

- Designed PCB prototypes using KiCad and improved the design of a latch-up current limiter using Spice simulations
- Developed embedded software for ATSAM MCUs using FreeRTOS to integrate ECSS services and CAN protocol
- Reviewed architectural documents on data handling and electronics for the ”Fly Your Satellite! 3” ESA program

Education

Thessaloniki, Greece **Aristotle University of Thessaloniki** **September 2017 – December 2023**

- Integrated Master Degree in Electrical and Computer Engineering, Specialization in Electronics and Computer Engineering, Grade: 8,54/10
- Synthesized and designed the back-end flow of RISC-V processors to benchmark and compare the designs based on Power, Performance and Area (PPA), as part of my thesis project

Projects

Parallel and Distributed Systems

- Triangle counting in big matrices using C, POSIX Threads, Cilk and OpenMP
- k-NN search using multiple processors using C and MPI
- Non-Local Means Image Denoising Algorithm implementation, utilising C and CUDA
- Binary Matrix Multiplication using C, MPI and Cilk