Yassine Oussaifi

Embedded Systems Developer

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Tunisian

15/09/1989

Single

in O-Yassine

LANGUAGES

English	★★★★★
French	★★★★☆
German	★★★☆☆
Arabic	★★★★★

PERSONAL SKILLS

- Active listening 100%
- Self-motivation 90%
- Communication 90%
- Critical thinking 80%
- Eagerness to learn more 100%

SUMMARY

Embedded software engineer with coding and troubleshooting skills.

- Broad Knowledge on Real Time operating systems.
- Solid understanding of hardware and low level software systems.
- Experience across a wide range of architectures and debugging tools.
- Hands on experience with logic analyzers and multimeters.
- Last but most important eagerness to learn more.

WORK EXPERIENCE

Embedded system Engineer

Oct **2015** - Present -

Yamaichi Electronics

Sousse/Tunisia, Munich/Germany

Interruption detector for vibration test according to VW80000

- Designed and implemented firmware for a 6 channels 4 wire resistance measurement and 2 extra channels for vibration and temperature profile monitoring device capable of a sample rate up to 10 MS/s using dual capture technic triggered by fast increase of contact resistance due to vibration (contact interruption).
- Designed and implemented a graphical user interface allowing the device to log data and the user to superpose test profiles with contact resistance curves, Fetch interruption events from an event table, perform statistical and harmonic analysis on channels as well as automatic test reporting. In standalone mode the device will show only a time stamped event list for each channel on its 4.3" capacitive touch screen.

Keywords: *Embedded C, Unity, ARM Assembly, µC/OS-III, µC/TCP-IP, STM32H745ZI, ARM DSP, FFT, DMA, uLCD-43DCT, ADC12010, PyQT5.*

BOSCH On Board Charge Manager EV-Charging socket monitor

- Creating AUTOSAR compliant software architecture as per our client's software architecture guidelines and developed an OSEK/VDX RTOS based SWC for hybrid and electric vehicle charging socket health monitoring.
- The Module monitor the insulation resistance of the charging socket when it is not conductively connected to the external power source. When the insulation resistance drops below a certain threshold due to material degradation or humidity the module notify the On Board Charge Monitor via a data frame.
- During charge, The module monitor the temperature of electrical contacts surface via several thermometrics infrared sensors embedded into the CCS type charge socket if the temperature rises more than a specified threshhold the module will signal the On Board Charge Monitor.
- Upon receiving a remote request from the OBCM the module will engage the lock mechanism of the CCS socket counterpart and send a confirmation data frame to the OBCM which will initiate the charging process, Upon receiving a remote request from the OBCM the module will unlock the counterpart and allow the driver to remove the charger.

Keywords: *Embedded C, Unity, AUTOSAR, OSEK/VDX RTOS, AURIX TRICORE, CAN, ISO 26262 ASIL-D.*

SKILLS ON BUILD

- Deep learning on ARM
- DSP on ARM
- Encryption and Hardware security
- YOCTO Project Embedded linux
- Bluetooth low energy

HOBBIES

Traveling

Tennis

Kiker

Cooking

High-Speed signal tester for automotive Computer-On-Board (V2)
(https://youtu.be/Jbc9B-KDnXU)
Board level tester:

- The device measure PCB trace resistance via fixed probes, a 7708 switching matrix and a keithley 2750 multimeter.
- The device instruct the multimeter via serial SCPI commands to carry a dry circuit 4 wire resistance measurement and move to the next channel (PCB trace) and report results to a graphical user interface via USB HID interface allowing the user to perform statistical analysis.

Keywords: *Embedded C, Unity FreeRTOS, MSP432, SCPI, USB HID, I²C, USART.*
Module Flasher:
Developed code for:

- Collecting data from I²C connected optical sensors to ensure proper module insertion into the BtoB connector.
- Listening to the IO controller (PCA9537), after every new insertion a mechanical counter will be incremented then the Module serial number will be calculated and stored into the carrier board EEPROM.
- Servomotoring of the HSD Fakra counterpart to establish a force controlled safe connection between the module and the Network analyzer and initiate HF tests via SCPI commands.
- Flash the module with SPL and U-BOOT from the inserted SD card.
- Instruct U-BOOT via serial console to download the DTB, uImage and File system via TFTP and flash the Uimage into eMMC.
- Show Flashing advancement on LCD screen and store the process log file within the FRAM.

Keywords: *Embedded C, Unity, FreeRTOS, STM32L4R5ZI, SCPI, UART, I²C, Linux boot sequence…*
System level tester and firmware updater:
Developed Python code for a BeagleBone Black based system running Debian 8.7 Linux operating system

- Send CAN remote frames to the Computer-On-Board 's carrier board (provided by the customer) and analyze the serial debug massages coming from the Computer on Board to check the behavior's validity of the tested modules by comparing with the expected response provided by the customer.
- Check and ensure the good behavior of the module Exemple: send ifconfig command and check the IP address to validate the Ethernet enable/disable status.
- Secure access to serial interface.

Keywords: *Embedded Linux, Python, TDD, PyTest, BeagleBone Black, PRU, UART, CAN FD.*

GRADUATION PROJECT

REGIM research Lab & Synopsys
Subject: design and realization of a telepresence robot.
Design: four wheeled robot equipped with 10" display and a stereo camera.
Uses: video-conferencing, Harsh environment inspection…

EDUCATION

National Diploma in electrical engineering specialised in Embedded systems

Sep **2011** - Jun **2014**

Natinal School of Engineering of Sfax

Tunisia

Main subjects: C/C++, ARM Assembly language, MCU & MPU Architecture, VHDL and Verilog, Artificial intelligence, Fuzzy logic, Digital Signal Processing, Real Time Operating Systems, Interfacing and communication protocols, combinatorics and sequantial logic, Power electronics, Industrial automation and control, , Power supply design, Embedded OS, Antenna theory...

Succeeded in Engineering preparatory school

Sep **2008** - Jun **2011**

Preparatory schools of engineers of Monastir

Tunisia

Main subjects: Physics, Calculus, Algebra, Chemistry, Automation, Computer science, Engineering sciences and technologies...

High-school degree with Technical specialization

Sep **2004** - Jun **2008**

Technical high school HS Djerba

Djerba

Main subjects: Electronics, Mechanics, Mathematics, Physics, English language, German Language, French language, Philosophy...

ABROAD EXPERIENCE

20/10/2019 - 25/11/2019: GuanDong/ Shanghai, China & Munich, Germany
visit our supplier of injected plastic parts ANT GuanDong, attending TestConX china and attending productronica.
22/06/2018 - 07/08/2018: Yamaichi Electronics, Munich
3 weeks of intensive AUTOSAR training organized by the company followed by several meetings with the customer to further understand the EV-charging socket monitor requirements.
05/09/2017 - 10/09/2017: e.Solutions, Ingolstadt
Assisting the delivery and test of 36 Module system level tester to our customer.
07/06/2017 - 08/07/2017: e.Solutions, Ingolstadt
Assisting the delivery and implementation of 20 Module flasher to our customer.
04/03/2017 - 09/03/2017: Arizona, USA
Attending a workshop on Burn-in & Test Strategies **BiTS**.
16/01/2017 – 03/03/2017: e.Solutions, Ingolstadt
Assisting the delivery and on site testing of 20 Module Board level tester to our customer.
08/10/2016 – 29/10/2016: Yamaichi Electronics, Munich
Reviewing the final design with the customer.
06/06/2016 – 27/06/2016: Yamaichi Electronics, Munich
Reviewing the initial design with the customer.
23/04/2016 – 28/05/2016: Yamaichi Electronics, Munich
Visiting the customer production site, holding a series of meeting to further understand our customer needs and starting the feasibility study phase with the lead mechanical engineer, Hardware designer and the project manager.
24/10/2015 – 12/12/2015: Yamaichi Electronics, Munich
Attending a series of basic trainings organized by the company for new employees.