Fouad EL KHIATI

Junior Embedded System and FPGA system engineer in the Aeronautical sector with one year of experience, Looking for a new opportunity as an embedded system engineer.

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Professional experience

Embedded software Test and Verification engineer at Safran Engineering Services
SkyNaute Next project for client Safran Electronic and Défence
07/2023 – 11/2024 | Rabat, Maroc

- Developed low-level requirements documents to ensure clarity and completeness, contributing to reduction in development revisions.
- Developed and executed functional and structural unit test plans and procedures for low-level requirements, improving test coverage.
- Verified embedded software architecture for conformity and efficiency.
- Ensured compliance between high and low-level requirements and source code.
- Conducted high-level requirements and model-based design test and verification and model coverage activities.
- Review activities according to Safran GT44 standard, V Cycle and DO-178C.

Skills and tools: V Cycle, DO-178C, GT44, High and low level requirements analysis, functional testing, PTC, manual testing, IBM Rational Test Real Time, C programming language, SCADE Suite, SCTL, TCML.

End-of-study internship at Safran Engineering Services Rabat
Design of an optimized FPGA circuit simulation environment with CoCoTB
02/2023 – 07/2023 | Rabat, Morocco

- Studied the architecture of a custom simulation environment used by the FPGA team within Safran Engineering Services.
- Implemented and qualified a simulation environment using the CoCoTB library.
- Identified the design under test and planned a comparative study methodology, facilitating a comprehensive analysis of simulation environments.
- Perform the comparative study and coming out with a final report in order to decide the weak and strong points between the two environments.

Skills and tools: QuestaSim · DO-254, Python, (programming language), Msys 64bit, GNU Make, RTL verification with CoCoTB, VHDL.

Technical internship at INTELLCAP SARL in Rabat
Design and implementation of the onboard hardware and software architecture of the INFINIUM X-Cube nanosatellite
07/2022 – 09/2022 | Rabat, Morocco

- Studied various constraints related to the nanosatellite project.
- Designed hardware architecture for on board computer.
- Implemented the software architecture for the nanosatellite flight software of the nano satellite.

Skills and tools: DO-278, CrossWorks Studio, Altium Designer, C language, FreeRTOS.

Education

National Institute of Posts and Telecommunications
State Engineer in Embedded System and Digital Services
10/2020 – 07/2023 | Rabat, Morocco

Polydisciplinary Faculty of Ouarzazate
General University Diploma in Physical Matter Sciences
09/2018 – 10/2020 | Rabat, Morocco

Skills

Microcontrolers
STM32F1 - STM32F4 - MSP430
● ● ○ ○ ○

Communication protocoles
UART - I2C - SPI - CAN - ARINC429 - AMBA
● ● ● ○ ○

C Language
● ● ● ● ○

C++ Language
● ● ○ ○ ○

Python for Digital design test and vérification
● ● ● ● ○

Hardware description languages
VHDL - Verilog
● ● ● ○ ○

FPGA Design Development Tools
Quartus II - ModelSim - QuestaSim - Xilinx ISE
● ● ● ○ ○

Aeronautics and aerospace industry standards
DO-178B/C - DO-254 - DO-278
● ● ● ○ ○

Embedded Software Test and Verification tools
IBM Rational Test Real Time
● ● ● ○ ○

Model based design tools
SCADE Suite
● ○ ○ ○ ○

PSpice
● ● ● ○ ○

Assembly x86/ARM
● ● ○ ○ ○

Operating systems
FreeRTOS - Linux
● ● ○ ○ ○

Langues

- Arab : Maternal
- Berber : Maternal
- French : Intermediate
- English : B2