Talel BELHADJ SALEM

Embedded Linux and Software Engineer — Yocto Expert Trainer

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TECHNICAL SKILLS

Linux Build System: Yocto
Operating System : Linux (Ubuntu, Fedora, etc.)
Embedded Linux: Cross-Compilation, Security, BSP Porting, Boot Process, ...
Software Development: Bash, Python, C, C++, gRPC, Design Patterns, Make, Cmake
Serial Protocols: I2C, UART, RS485, SPI
Wireless Protocols: 802.11, Bluetooth/BLE
Network Protocols: DHCP, DNS, SMTP, FTP, NFS
DevOps: Docker, Ansible, Vagrant, Gitlab CI
Penetration Testing
Scrum/Agile: Experienced

EXPERIENCE

Embedded Linux Engineer
August 2019 – Present

Sofia Technologies — *Ariana*

- Developed BSP layer for IMX8MM custom board
- Maintained each new Yocto project architecture and BSP porting
- Ported Linux kernel and U-boot on new Hardware
- Supported different custom hardware modules with Yocto BSP layers
- Developed Cmake projects (C/C++) with different libs: gRPC, POCO, ...
- Worked on wireless protocols: 802.11 (EasyMesh), BLE
- Worked on different other protocols: MQTT, UART, I2C, Modbus TCP/RTU, SPI
- Developed Linux device drivers: MIPI DSI, SPI, I2C

Graduation Project
Feb 2019 – May 2019

ISET — *Sousse*

- Creation of an automated virtual infrastructure for deploying network services
- Integration of network protocols DHCP, DNS, SMTP, NFS, FTP, HTTP
- Work with Ansible, Vagrant, Virtualbox and LXC/LXD
- Development of a local SSL CA server
- Development of CLI project to automate Vagrant machine files

Technician Trainee
Jan 2017 – Feb 2017

Tunisia Telecom — *Jammel*

PROJECTS

Gen20x | *Automotive Test Maintainer in behalf of Daimler*
Mars 2022 - Present

- Maintain the Python test interface
- Maintain the Shell test interface
- Support debugging the system's Automotive services
- Develop and maintain Automotive services stubs
- Support with Robot framework tests development
- **Keywords**: *Linux, Shell, Python, Robot Framework, SOME/IP, DBUS, V4L2, Diagnostics, C++*

MIAE | *Azure IotEdge Migration Project*
January - November 2022

- Designed the Cloud and Embedded Architectures
- Designed and maintained Yocto official layer
- Contributed in both Azure and Embedded Software components
- Wrote Design and Technical documents
- **Keywords**: *Yocto, Python, TALQ, Azure*

Tethys | *Linux Distributed Water Management Solution*   June - November 2021
- Designed the project's architecture
- Designed the project's software design patterns
- Created and maintained the project's Yocto layer
- Developed support for Modbus RTU Kernel and DTS support
- Developed C++/Python project services
- Wrote technical documents
- **Keywords**: *Linux, RS485, Yocto, DTS, C++, Design Patterns, Python*

Authento | *Linux Automotive ECG Based Controller*   February - June 2021
- Developed SPI Linux kernel driver for ADS1293
- Created and maintained official project's Yocto layer
- Integrated all software dependencies of the project
- Supported QT project's software in Yocto
- Developed custom dashboard with CGI Studio
- **Keywords**: *Linux, SPI, Qt5, Bash, BLE, Device Drivers, Wayland, CGI*

Arken | *BSP and Software Support for MENZU PREMIUM*   November 2020 - Present
- Hosted kernel and u-boot on local git
- Developed Yocto layer for MEDIA support on IMX8MM
- Developed official BSP layer for IMX8MM
- Maintained development on the BSP layer and Linux/U-boot
- Wrote guide documents for the final custom IMX8MM EVK
- **Keywords**: *Yocto, IMX8MM, Linux, U-Boot, C, Bash, Kernel drviers*

Confidential Project | *Smart Linux WIFI and Bluetooth Monitor*   June 2019 - February 2021
- Developed a custom Yocto layer for the project
- Development of services to analyze WIFI and BLE protocols packets
- Worked with UART, SPI, SDIO, PCI to support hardware modules into the board
- Worked with WIFI modules: Fnlink, RTL8812U, MT7612U, Redpine, Spb228
- Worked with Bluetooth modules: Fnlink RTL8821, Cypress
- Worked with 4G modules: Fibocom NL668, SIMCOM
- Integrated MENDER solution into IMX8MM with custom factory reset system
- Wrote technical document for each generic task
- **Keywords**: *C/C++, Python, Yocto, IMX8MM, Linux, WIFI, BLE, 4G*

EDUCATION

SESAME University   Ariana
Engineer's Degree in Computer Science   *Sep. 2019 – Present*

ISET High School   Sousse
Applied License in Networks and Computer Services   *Sep. 2016 – Jun 2019*

Secondary School   Beni Hassen
Mathematics Bachelor   *Sep. 2011 – Jun 2016*

LANGUAGE SKILLS

Arabic: Mother Tongue
English: Proficient
French: Intermediate

CENTER OF INTEREST

Arabic Poetry: Wrote a collection of 3000+ verses
Arabic Grammar: Wrote a collection of 700+ verses
Chess: Skilled