Mohamed **Azzouni**

SENIOR SOFTWARE ENGINEER · LINUX/YOCTO - STB/DRM/OTT - JAVA/KOTLIN/SPRING - JAVASCRIPT/NODEJS/ANGULAR - JENKINS/DEVOPS

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Skills

Programming	C, C++, JAVA, KOTLIN, BASH, PYTHON, PERL, SHELL , Makefiles, HTML, PHP, XML, Javascript
Tools & CI	SVN, Git, Github, Gitlab, Bitbucket, Jenkins, JIRA, Confluence
Web & OTT	nodejs, dashjs,reactjs, expressjs, angular, shaka player, Packet Video, GUPNP, Lib Platinum, REST
J2ee & DB	Java Jersey Rest, J2ee, Spring, Rest, PostgresQl, Mongo db, Hbase
Embedded	Android: NDK/SDK/JNI, STB:Middleware & Drivers, OpenEmbedded:Yocto & sBitbacke
Networking	HDCP, MPEGDASH, HLS , VOD, OTT,Playready, UPNP, IPV4, TCPIP, Serial, ..
Languages	Arabic, French, English

Education

ENSI(National School of Computer Sciences of Tunis) *Tunis, Tunisia*

ENGINEERING DEGRE IN COMPUTER SCIENCE *2004 - 2007*

speciality in open systems and networks

Experience

Fy.W *Hybrid: Tours , France*

LINUX YOCTO EXPERT *Juin. 2023 - Present*

- Migrate svn yocto repository from svn to Gitlab
- Setup CI using KAS and gitlob ppipelines for complete yocto configuration
- Migrate Yocto dunfell to yocto kirkstone for all Sama5 platforms
- **Environment :** , SAMA5, SVN, Gitlab, Linux, Yocto , Device Tree, Uboot, yocto dunfell , yocto kirkstone, kernel, modules kernel

F.AI *Remote: Paris , France*

LINUX YOCTO EXPERT *Octopber. 2023 - December 2023*

- The company Setting a Linux distrubution for AI based on amazon aws yocto layer and AWS machines
- My tasks were to setup the first version of a comple Yocto linux distro from scratch on Github
- Setup dockerfile and Script CI to build and autiomatically deploy on Amazon AWS machines
- **Environment :** Amazon AWS, Github, pipelines, Yocto , meta-aws,

Fy.W *Hybrid: Tours , France*

LINUX YOCTO EXPERT *December. 2022 - December. 2023*

- Build yocto Linux distrubution for HW with bitbus serial connection
- develop kernel module that manage a network interface and make the link with the serial bitbus connection
- **Environment :** SAMA5 ,SVN, Linux, Yocto , Device Tree, Uboot, yocto dunfell , yocto kirkstone, kernel, modules kernel

ELEKTROBIT *Carrières-sur-Seine , France*

SAFE API DEVOPS DEVELOPER *September. 2021 - Februray 2023*

- In project Safe Linux for EB, I'm responsible of packages builds as well as documents Builds
- Setting up a Poc for CI Framework as a python package
- Setting a Cmake build system for documenrts builds
- **Environment :** Linux, Suse Open Build Service, GITHUB , Jenkins, Python, Cmake, docbook, docker

ELEKTROBIT
Carrières-sur-Seine , France

EBLinux-3 Architecte
September. 2020 - Februray 2023

- Architect: EBLinux-3 is a safe Linux Automotive distribution for EB, based on SUSE Open Build Service and Suse Kernel
- This new Version in no more based on yocto, here we deliver rpm packages using OBS
- Responsible for setting test environment:
    — adding needed repository , and packages
    — Setting up EBS packages definitions
    — setting up Building environement
    — setting up needed scripts to run qemu
    — setting up needed scripts to install image on Hardware Targets IntelDenverton and makeavailable for all team
- Responsible for setting coverage tests.
- **Environment :** Linux, Suse Open Build Service, Intel Denverton , code coverage, obj coverage CI, Jenkins

Carrières-sur-Seine , France

EBLinux Architecte
August. 2018 - August. 2020

- Architecte on EB-Linux: EB-Linux is an Automotive Linux distribution for EB, based on Yocto Open-embedded tools
- This Linux distribution will manage containers to run user applications
- This Linux distribution support RCAR H3/M3 and Intel on bare Metal or on A Hypervisor based on L4 (Fiasco) Microkernel
- My intervention :
    — Support on Requiremnts definitions and redaction
    — Techniqual tickets creation on JIRA based on Functional or Client Requirements.
    — Recipes implementations and maintaining related to network area
    — Client Project task force support on bitbake and recipes hot fixes:
        * removing openssl
        * enabling SMACK Mandatory ACCESS Control Kernel
        * ..
- **Environment :** Linux,Yocto, Renesas ,L4 Microkernel, CI, Jenkins, RobotFramework, LTP, BASH, C/C++

Carrières-sur-Seine , France

EBLinux CI Team Techniqual Lead
Sep. 2018 - August. 2019

- Techniqual Responsible for Continous Integration Team: plan, support team and follow activity
- The team is made up of six engineers based in Croatia
- Team goals was to setup testing unit testing , integrations .. Merging verifications on nightly and weekly frequency
- Tests are setup on Jenkins Server's and robot frameworks tests for LTP tests on Yocto Framework
- Tests are run on Qemu and Hardware targets using tools and scripts created within the team and results are saved in Github
- CI is based on Github and Jenkins using Merging Trigger on Pull Requests
- **Environment :** Linux,Yocto, python, xml, CI, Jenkins, RobotFramework, BASH, C/C++

EXPWAY
PARIS , France

Linux/Android Development Engineer
Jan. 2018 - Jui. 2018

- Development of Solution for Public Gateway EMBMS Live Services WIFI multicast
- LTE eMBMS (evolved Multimedia Broadcast Multicast Service) are used to drive live multicast service to end userphones.
- An LTE Outdoor unit is connected to a Gateway, the soft to be developed will be deployed on PG to activate dash live services and forward multicast packet to WIFI.
- based on Expway Libarary a service will be developped and installed as daemon onBroadcom based public Gateway
- **Environment :** Modem AT-Command, Broadcom ,Gateway, WIFI, Multicast, dash, EXPWAY Middleware , redmine , C, C++, Android

SFR-Numericable
Saint-Denis , France

Software DRM/HDCP Engineer
Feb. 2016 - Dec. 2017

- Integration of Netflix nrd 4.3 within new 4K STB .
- Concept and develop a library HDCPmanager that provides interface to manage hdcp link in 1.X and 2.x protocole versions.
- Concept and develop a library DrmManager that provides interfaces to manager Playready 2.5 and eventually Widevine for SFR new Box used for VOD playing
- Concept and develop a library that will install provisioning Data on STB : On factory for SFR new Box (data : Nagra, HDCP, DRM and SFR keys)
- Integration of STMicroelectronics PlayReady SDK in SFR Set Top Boxes products
- Developing a library interface of STM PlayReady SDK , to be used by SFR Middleware on Set Top Box .
- **Environment :** STB, STM, Broadcom , Middleware WYPLAY, MW SFR , C, C++, PlayReady 1.2/2.5,TEE, Gentoo, mercurial, Git
- **References :** Sbastien Keller(SFR), François Delavaud , Anouar Chelbia (SFR), Vishal Sharma (Netflix)

- Integration of Netflix Partner Client Code in Middleware code on Set Top Box Based on 7105 Chip of STM.
- Porting some parts of Netflix client code (audio and video driver and some Direct FB code) to work on 7105 based Set Top Box
- Realization of automatic Netflix tests and certification
- Monitoring with Netflix partner via weekly conferences calls between team in US and France and daily coordination integration
- **Environment :** STM, MW SFR , C, C++, PlayReady 1.2, DirectFb ,TEE, Gentoo, mercurial, Git
- **References :** François Delavaud , Anouar Chelbia (SFR), Vishal Sharma (Netflix)

Bouygues télécom *Vélizy-villacoublay , France*

Software integration & developping Engineer *Feb. 2014 - Jun. 2014*

- Development of software module that use a cloud client (based on PogoPug Fuse solution); So the user could connect , mount and use his pogo cloud files on her STB
- Development and integration of Media Center new features on Middleware.
- **Environment :** STB, Middleware Sagem ,Product Bouygues Sensation Box , C, C++, Linux, UPNP, DLNA, POGOCLOUD Cloud, Fuse File system, PacketVideo
- **References :** Sandrine Figard (Bouygues telecom), Majed Jabri (Bouygues telecom)

Architecte STB for PVR Sharing Service *Jun. 2013 - Jan. 2014*

- Writing of SSA (Software Specification Architecture) of service STB PVR sharing (PVR: Personnel Video Recording) : secured solution based on Protocol HLS to play STB recorded movies on LAN and WAN devices ; records will be transcoded , segmented , encrypted and served to clients).
- Writing of STS (Software tests Specifications) of PVR Sharing service on STB part of Service.
- **Environment :** STB, Middleware Sagem, LibPlatinum, C, C++, Linux, UPNP, HTTP, HTTPS,SSL
- **References :** Nicolas Gaude (Bouygues telecom), Jabri Majed(Bouygues telecom)

Software Enginner *Sep. 2011 - May. 2013*

- Develop Web Services STB Export module that will export multiple STB features (Remote Control, Pairing, PVR, EPG ..) via HTTP Rest and UPNP.
- Develop STB DMR : module proposing DLNA DMR service UPNP and HTTP Rest.
- Develop MediaPlayer : module STB, for mixed playlist media managements
- Develop Receiver Expo STB : module that serves as a asynchronous full duplex communication library between the Middleware and Web Services Export Binary
- Develop PfsProxy : module on multiple platforms (STB, Android and IOS) of for connection and communication with Bouygues platforms (EPG, PVR, OAuth, Smartvision ..) with automatic authentication tokens management.
- Develop DMC : module on multiple platforms (STB, Android and IOS) it's a UPnP control point
- Development of a Native Middleware on Android (NDK / C / C ++ / JNI / JAVA and JAVASCRIPT) composed from DMC, DMS and PF-SPROXY : JNI , JAVA and JavaScript Layers for each library ..
- **Environment :** Middleware Sagem, STB, C, C++, Java, JNI, JavaScript, Android, Linux, UPNP,DLNA, SOAP, REST, LibPlatinum...
- **References :** Nicolas Gaude (Bouygues telecom), Jabri Majed(Bouygues telecom), Pascal Souveaux(Bouygues telecom), Joël Motoumassy (Bouygues telecom)

NDS-CISCO *Issy les Moulineaux, France*

Consulting Engineer *March 2010 - Aug. 2011*

- Development and integration of a module within Middleware STB ; it's a MediaCenter module that allow the sharing and control of medias over networks via Upnp/Dlna Protocol.
- DMS (Digital Media Server) solution is Twonky from PacketVideo company
- Development of a module in C for control and management of the Twonky server via RPC and for sharing FTA PVR and media content from USB drives connected to the STB
- Development and JAVA JNI layer of the module to be exploited later by the UI in JAVA
- **Environment :**Middleware MHP de NDS-CISCO, languages C and JAVA, Shell, Makefiles, UPNP, PV Twonky API, PV Twonky Server.
- **References :** Hassen Taleb (NDS-CISCO) , Eric Delaunay (NDS-CISCO)

Sagem Défense *Massy-Palaiseau, France*

Software Engineer Development *Dec. 2009 - Feb. 2010*

- TMA : Third Maintenance Application of Network Server System on aircraft Airbus A380
- **Environment :** C, C++, Java, Perl, Python, SGBD MYSQL, Linux ..

Eurogiciel
Tunis, Tunisia

SOFTWARE ENGINEER
May. 2009 - Nov. 2009

- Design and implementation of an application that manage a Switch via i2C in the NSS (Network System Server) for the Airbus A380
- The PSM, interfaces with LDAP, VPN, an I2C interface to control the Switch and a Flight switches.
- Test are automatized in virtual environment using Perl scripting and shared memory C programs .
- **Environment :** C, tested and integrated under Linux FreeBsd 5.3. , perl ..

STMicroelectronics
Tunis, Tunisia

SET TOP BOX LOW LAYER DEVELOPMENT ENGINEER,
Out. 2007 – Apr. 2009

- Engineer in STAPI (ST-API) team : responsible for development, maintenance and support for VOUT (Video Output Stage) and HDMI (High Definition Multimedia Interface) drivers for STM socks.
- Bug fixing and support for various clients.
- Porting of drivers code on new chips and update documentation of drivers for new socks
- **Environment :** C, OS21, STLinux, Clear Case, socks: ST7100, ST7109, ST7200 et ST7105.

Internal Projects EASYSOFT-IN

sbr-generator: Open source
sbr-generator on Github

OPEN SOURCE SPRING REST GENERATOR

- This is a a rest server based on Spring Boot generator , first version it was an npm binary and current (v2) it's a complete python package.
- This python package provide a tools that will generate a rest spring server with multiple features from a simple yaml config file :
    - jwt token is ready to be used with authentication
    - can also enable and generate java tests files for created code
    - security can be enabled on role based restrictions
    - a generated database ,connection and models , ready to e used
    - dev and prod profiels with different database
    - ...

fjplayer: Open source
fjplayer on Github

FJPLAYER MPEG DASH/MP4 VIDEO PLAYER   _Nov. 2012_

- The FJPlayer Html 5 Js player based on Video Balise
- The FJPlayer also is based On Dashjs player
- Once we ask to play a media content on website , the player will ask the encryption key of the media presenting the web site AppID, then get the mpd and start streaming , decrypting and playing..

EKIOSK : Private Source
BitBucket Project Link

REALIZATION OF FJ STREAMING ENGINE   _Jun. 2012 - Jan. 2017_

- The EKIOSK is a yocto based project used to realize kiosk like images deployed on ARM raspberry pie, composed by :
    - meta-eck : yocto layer that define all needed recipes
    - include browser layers to run web kiosk application
    - packages source code : ..

Forja Streaming Engine: Private Source
BitBucket Project Link

REALIZATION OF EASIN SALES SERVER   _Nov. 2018 - PRESENT_

- The ESS is three part project, containing :
    - A J2ee rest spring java server with a PostgreSQL Database behind called ESServer
    - An Angular 7 Server based Angular Material UI called EBILL
    - A phone App still to come..
- ESServer :
    - The FJServer will save and manage invoices created by user from EBILL
    - manage also clients , company ..
    - It propose a Rest Api proteted by json Token mechanism.
- EBILL :
    - It's the Server Front END , A Web applications based on Anuglar 7 , and on Angular Matriel.
    - It will allow User to connect to ESServer
    - It will allow User to define invoices and manages saved invoices, export them in pdf ...

Easy Upnp: Private Source
Google Play Link, Github Link

REALIZATION OF AN ANDROID APPLICATION   _Nov. 2012 -Nov 2021_

- The application is an upnp control point that allow to discover and control upnp devices on a lan network.
- This app was completly developpend with kotlin code (a old previous version was done using Java).
- This app also contains advertissment , it's done with google AdsMob..