AVULA SRINIVAS REDDY

**Professional Summary**

* Over 12 years of experience as application developer on Mobile Devices, Linux, Android and Embedded Systems.
* Experience creating Mobile Multimedia applications, Multimedia frameworks (GStreamer, OpenMAX, DirectShow) and Designing User Interfaces on various platforms.
* Developed applications on Linux, Symbian & Windows Mobile OS.
* Familiarity with CISCO CRS Routers; developed FPD upgrade for Route Processor card, Line Card & Fabric Cards
* Experience in using GStreamer, DirectX (DirectShow), OpenMax frame works.
* Experience with networking technologies (TCP/IP, Http and Socket programming).
* Experience in ARM assembly programming and Debugging tools (ARM ADS, RVDS, Linux GNU tools, Jtag) Code Optimization Techniques, Cross-platform code for multiple targets.
* Experience in developing code with sensitivity to thread-safety, concurrency and performance issues.
* Cross Tool Chain, Open Embedded, Set up of Linux Environment on TI-OMAP, panda and beagle boards.
* Worked with outsourced development teams to manage application development schedules.
* Familiarity with multimedia standard Encoders and Decoders (MPEG, JPEG, H.264, MP3, MIDI, SMF, XMF, ADPCM, AMR and i-Melody).
* Familiarity with specifications like Bluetooth (Bluez stack), OMA DRM, OMA DM.

**TECHNICAL SUMMARY**

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| --- | --- |
| **Languages & Technologies:** | C, C++, Qt, Java, gtk+, Open Embedded, Multimedia frameworks (DirectX/DirectShow, OpenMAX, gStreamer, Alsa), Socket programming, MP3, JPEG, and ARM Assembly programming, OMA DM, CISCO CAPI, CRS CHASSIS, Linux device drivers |
| **Operating Systems:** | Linux , Android, Symbian, Windows Mobile,T-Engine(RTOS) |
| **Tools:** | GNU Tools (gcc, make, gdb,), adb, svn, git, ARM Real View Debugger Suite(RVDS), ARM ADS, JTAG and CCS(Code Composer Studio) |
| **Scripting:** | Shell Programming (bash, kshell),Perl, Python |

**PROFESSIONAL EXPERIENCE**

**HARMAN – FARMINGTON HILLS, MI DEC 2014 – TILL DATE**

**Sr. Software Engineer**

Engineering Requirements for Apple Car play.

**HONDA SILICON VALLEY LABS (HSVL) – MOUNTAIN VIEW, CA MAR 2013 – OCT 2014**

**Sr. Software Engineer**

Description: Integration of Apple car play with HONDA HeadUnit (Infotainment system) & implementation of UI for Head Unit (Panda Board, Nvidia Jetson)

* Developed UI for HONDA Head unit IVI (in-Vehicle-infotainment).
* Integrated Apple car play stack with Honda IVI, worked on Audio ,HID, Command switch(using GPIO),Bluetooth
* Implemented audio layer using GStreamer and ALSA
* Developed prototype of Android Wear in Honda car
* Debugged OAA - (Open Automotive Alliance).
* Evaluated Dynamic Test Tool (DT10).
* **Technologies/Frameworks:** C, C++, Qt, Linux (GStreamer, ALSA), Apple Car Play, OAA, Android Wear, IVI- in vehicle infotainment

**CISCO - SAN JOSE, CA MAY 2012 – JAN 2013**

**Software Engineer**

Description: FPD Upgrades (Field Programmable Devices) for CISCO Carrier Grade Routers (Route Processor, Line Cards and Fabric Cards).

* Developed FPD Upgrade code for CISCO Carrier Grade Routers (CRS) for CCC Module (Card Controller Chip).
* Provided ability to perform field upgrades via SPI flash feature for Local (used PCI interfaces) and Remote Cards (using Ethernet Interfaces).
* Upgraded FPGA, PON and Switch images on Cisco Route Processor, Line Cards and Fabric Cards.
* Unit testing and Smoke testing on Fully Loaded Chassis. Bug fixing in CCC driver. Implementation of CLIs.
* **Technology framework:** C, Linux, GDB, (Hardware used-CISCO CRS Chassis).

**SONY MOBILE - REDWOOD CITY, CA SEP 2011 – APR 2012**

**Software Engineer**

Description: Investigating and Bug fixing on Sony Ericsson Android devices.

* Investigated and fixed bugs related to AT&T hotspot specification requirements.
* Triaged and debugged stability problems identified by test teams.
* Verified and propagated fixes for software failures.
* Developed automated test scripts.
* Understood Android frame works Audio Flinger and Stagefright.
* Analyzed Android Audio (Audio Flinger and ALSA) stack.
* **Technology framework:** Android, C, C++, Git, Adb, Clear Quest, Qualcomms MSM chipset

**TASER Int. – SANTA BARBARA, CA OCT 2009 – AUG 2011**

**Sr. Linux Developer**

Description: Development of Axon Controller and integration with middleware of Linux open source frameworks/libraries (Gstreamer, boost, C++) for OMAP3530 based device (AXON).

* Added new features for Axon controller, which controlled and handled event between GUI and Axon DVR (Digital Video recorder).
* Customized and Set up Open Embedded Build system with Angstrom distro on Linux (Ubuntu) from scratch; used Linux kernel 2.6.22
* Developed shell scripts for unit testing and long duration test using Shell scripts.
* Profiled Axon Controller using Valgrind.
* Ported Axon controller to Qt (on Linux). Set up of build and wrote build system scripts
* Performed bug fixing for Axon Controller. Tested automation of AXON and DVR.
* Performed analysis using Linux audio driver (ALSA) on AxonDVR.
* Implemented UI using Android.
* **Technology framework:** Linux, Boost, C++, git, gdb, Glibc, svn, Shell programming, OpenEmbedded (Angstrom distribution), D-Bus, Gstreamer, Alsa, TI OMAP3530, Qt, CodeSourcery, busy box, mpeg4, Jira, Android

**SONY ERICSSON – REDWOOD CITY, CA JUN 2009 – OCT 2009**

**MIB Engineer**

Description: Bug fixing and investigating into performance issue related to Xperia2 device.

* Identified bugs and performance-related issues with third party applications like camera rotation performance, delay in receiving mail from Xperia mail client, device power consumption, and stability related issues.
* Tested Xperia application using Windows CE tools (CEDebugger, Device health, Application verifier)
* **Technology framework:** Windows Mobile 6.5, Windows Ce tools (CEDebugger, Device health, Application verifier)

**SAMSUNG – DALLAS, TX SEP 2008 – JUN 2009**

**Sr. Software Engineer**

Description: This project is aimed Analysis of open source Multimedia frameworks like GStreamer, Phenon (Linux) and providing a Multimedia Framework for Samsung mobile phones and Porting of OMA DM stack on to WPP platform.

* Proposed Multimedia framework.
* Presented High Level Design document.
* Developed/Implemented HTTP interface layer for OMA DM.
* Understood various Multimedia frameworks like OpenMAX, gStreamer and DirectShow.
* Understood SHP and WPP platforms of Samsung and Qualcomms CMX Interfaces.
* Participated in code reviews of Common Database.Porting of OMA DM on to Samsungs WPP platform.
* **Technology framework:** C++, Phenon (in Linux), OpenMAX IL, OpenMAX AL, Qualcomms CMX APIs, WPP, SHP, Clearcase

**VIDRUNNER – BLACKSBURG, VA MAY 2008 – SEP 2008**

**Software Engineer**

Description: Vidrunner is a peer to peer mobile video streaming application and service that allows mobile phone users to stream live video to multiple simultaneous users on other mobile devices or PCs.

* Designed and Implemented UI.
* Developed various UI screens like video viewer and video recorder, splash screens, context help, customized skins, animated message box, settings list for Vidrunner product.
* Optimized given code to increase performance.
* Debugged and tested on different screen devices.
* **Technology framework:** Symbian (S60, Carbide C++, Symbian UI designer, C++, Devices used: N95 & N95 8 GB

**CSXPERTS Ltd. – RICHMOND, VA DEC 2007 - APR 2008**

**Sr. Software Engineer**

Description: Aim of this project was to provide a parser tool for the Simple Content Format.

* Created SCF writer and Parser tool using XML and win32 SDK.
* Developed UI to display SCF parsed data and created Installation package for SFC parser tool.
* **Technology framework:** Win32 API, C++, Microsoft Visual Studio 2005, SCF, XML.

**INTERVIDEO - JAPAN SEP 2006 – OCT 2007**

**Sr. Software Engineer**

Description: Faith Audio Engine is a product of Faith Inc. It provides support for Synthesis, Playback and Recording of Audio file formats like (midi, smf, xmf, i-melody, adpcm, smaf and AMR).

* Developed Audio Playback Interface on Windows mobile and Linux.
* Designed and Developed UI to test Audio engine as standalone application.
* Integrated Audio Engine with playback Interface.
* Implemented Synthesizer as DirectShow Transformation filters and made Compatible to Windows Media Player.
* Developed Audio Recording Application on Smart Phone 2003 and Pocket PC.
* Provided same as direct show Source filter with AMR encoder.
* Optimized AMR encoder by converting part of code to ARM assembly.
* Ported audio synthesizer and implemented player application on NOMADIK and Arcsoft SDKs.
* Integrated surround and equalizer effects into audio engine.
* Created test application to test Audio Engine and entire stack.
* Developed multi-client chat application using sockets in Linux.Study of Direct Show architecture.
* **Technology framework:** Linux, Windows Mobile, Direct-X(Direct show), PlatForm Sdk, Windows CE, Pocket PC, Smart Phone, ARM assembly, NOMADIK and Arcsoft SDKs, UNIX sockets, V-Tune performance analyzer, C++.
* **Devices used:** WS3 (sharp), Dopod (HTC), BenQ

**TEXAS INSTRUMENTS - JAPAN APR 2006 – SEP 2006**

**Sr. Software Engineer**

Description: In this project Faith Audio Engine is provided as Linux Device Driver, Qtopia Plug-in, and as Shared Library.

* Ported on to OMAP 2420&2430 with Linux as Operating system and without operation system.
* Developed Audio synthesizer as Device Driver Module in Monta Vista Linux.
* Wrote core synthesizer functions into ARMv4 and ARMv5 architecture compatible assembly code and modified Directives to ARM-Gcc compatible.
* Developed audio playback application and handled Audio Synthesizer API`s inside Qtopia as Plug-in Media API’s.
* Integrated Audio Engine with Helix media player.
* Set up build environment for Arm Linux cross compiler on Monta vista Linux and converted kernel image into U-Boot format so that image could be loaded on to OMAP board through U-Boot.
* Guided offshore team in integration of Audio engine as Linux ALSA sequencer.
* Ported Synthesizer onto TI-OMAP1710, TI-OMAP2420 and OMAP 2430 with Linux as OS and without OS or firmware.
* Developed test application to test audio synthesizer for limited wave tables.
* Ported MP3 decoder and developed audio driver application on Cygwin; created it as subsystem on T-Engine.
* **Technology framework:** Linux, Qtopia Phone Edition(linux), ARM assembly, ALSA, Linux device driver, C++, Gdb, QT, CCS (Code Composer Studio), ADS, RVDS, OMAP 2420&2430, Firmware, MP3.

**GRACENOTE - JAPAN OCT 2005 - APR 2006**

**Sr. Software Engineer**

Description: This Application records the song, processes recoded data and generates a finger print which is used to fetch the song metadata (like song title, author, album etc) using HTTP in windows mobile.

* Designed and developed HTTP module.
* Developed audio recording module.
* Resolved synchronization issues
* Designed and developed GUI interface for displaying fetched data.
* Ported above application onto Windows Mobile and Brew Sdk.
* **Technology framework:** Symbian, Windows Mobile, Windows CE, Smart Phone, BREW, HTTP, Visual Studio 2005, C++ and Carbide C++ and Visual Studio).

**FAITH Inc. Aug 2005 - Sep2005**

**Sr. Software Engineer**

Description: This is an in house project and is aimed at implementing the OMA DRM stack so that music content can be delivered securely for playback on computers, portable devices, and network devices.

* Provided Design documentation, Technologies to be used and Time Estimation of OMA DRM system.
* Led 3-member team.
* Identified risk factors involved and reported same to Business Managers.
* **Technology framework:** OMA DRM (Digital Rights Management).

**NOKIA - JAPAN SEP 2004 – JUL 2005**

**Sr. Software Engineer**

Description: Faith Audio Engine provides support for Synthesis, Playback and Recording of Audio file formats like (midi, smf, xmf, i-melody, adpcm, rtt and smaf).

* Designed and Developed UI, Plug-in, and Audio Playback Application Interface using Symbian Series60 Multimedia APIs frame work for Faith Audio Engine.
* Understood and analyzed Faith Audio Engine.
* Compiled entire stack on Series 60 Emulator.
* Isolated OS dependent and OS independent functions in entire Audio Stack (Parsing layer and Synthesis layer).
* Developed UI and Audio Playback Interface which used PCM data to drive audio.
* Wrote core functions of Audio Engine in ARM assembly for performance optimization.
* Modified whole Audio Engine stack to be compatible to Series 60 Target Device.
* Integrated audio affects (surround, equalizer) to Audio Engine stack.
* Provided Audio Engine as Plug-in for EPOC.
* Developed and provided audio interfaces to i-mode lite and mDLS synthesizers.
* **Technology framework:** Symbian Series 60 SDK, C++, ARM assembly, ADS, Gcc, Gdb, Microsoft Visual Studio, Nokia 6600 &6630 mobile devices.

**NEC SYSTEM TECHNOLOGIES - JAPAN DEC 2003 – JUN 2004**

**Software Engineer**

Description: To fix bugs in Media Player stack of NEC’s N900i Mobile Phone stack

* Performed bug fixing in Movie Player API for N900i mobile Phone and in Folder display, Soft key display and Play List display. Tested
* Analyzed Player code.
* Cross compilation of Linux tool chain
* Set up of T-Engine board (on Linux ) and studied different system drivers
* **Technology framework:** Nucleus OS, C, Linux

**EVERY ONES LINUX NOV 2001 – MAY 2003**

**Programmer**

Description: Every Ones Linux is a Product Development Company aimed to develop a user friendly Linux desktop system similar to that of Windows.

* Developed GUI tool for changing resolution and color depth; main feature was ability to easily pick modes user wanted to use for each color depth and have it output XF86Config file with only modes selected.
* Used File Share wizard to provide simple way to share files/folders with other windows or Linux systems in LAN.KDE Windows manager modification for Elx Linux
* Buildt RPMS and wrote Spec files for Elx from other distributions (Red Hat, Suse, Mandrake)
* Wrote spec files for Elx RPMS.
* Configured and Built kernel images
* **Technology framework:** RedHat Linux , Qt , KDE, Gnome ,GTK+, Gdb, Perl, PyGTK JAVA, Shell Scripting, GNU tools and Mandrake Linux

**Education**

**Visvesvaraya Technological University**

Bachelors of Engineering