Manish Varma
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Objective: To obtain a position of Embedded Software Engineer that leverages my creative problem solving ability, analytical skills, and desire for continued learning

Highlights of Qualifications

- 11+ years of experience developing Embedded S/W on variety of platforms mainly Embedded Linux
- Working knowledge of device driver development, multi-threading, socket programming and IPC
- Experience of development on embedded Linux, RTOS & non OS environments
- Skilled in boot-loader, kernel hacking and hardware troubleshooting
- Self-motivated professional with good organisational skills who thrives in a fast paced environment

Technical Skills

- **Operating Systems:** Linux (including Embedded Linux), UNIX, eCos
- **Controllers:** ARM7, ARM9, Cortex M series, TI's DSP, LPC, PIC, MSP430 Series
- **Programming Languages:** C, C++, shell scripts, awk, assembly (interpret level), java (basic)
- **Devices:** USB Cellular Modems, Wi-Fi, GPS, EEPROM, Audio Codec, RTC, GPIO, ADC, DAC, Custom Keypad & LCD
- **Communication Protocols:** SPI, I2C, RS-232, RS-485, HPI, H.323, SIP, RTP, UDP, TCP/IP
- **Packages/IDE:** gcc, gdb (including gdbserver), make, cross platform tool chains, IAR, Keil, MPLAB, CCS, VMware, cygwin, git and mercurial Hg
- **Tools:** Multi-ICE, XDS510, ICD, FET Debugger, AVR ISP MKII, DSO, Logic Analyzer, Ethereal

Achievements

- Independently developed character based device driver in Linux for HPI interface between Host (ARM9) and DSP (TI TMSC54CST) to exchange real time audio between two endpoints [2008]
- Brought down boot-up time of custom embedded Linux based camera to nearly 7.2 Seconds [2013]

Work History

Sr. Embedded Systems Developer Geotab Inc – Oakville From Sep 2015

- Developing firmware for next generation Linux based Telematics device
- Mainly involved in GPS, accelerometer, USB cellular modem & WiFi modules
- Customizing bootloader, kernel, rootfs and toolchain using buidroot

Firmware Engineer VerifEye Technologies – Markham 2012 - 2015

- Develop firmware for Linux based H.264 camera using NXP' SoC powered by ARM92JE-S
- Implement company's proprietary communication protocol (HSDL) over RS-485 channel
- Enable support for various USB cellular modems, USB to WiFi/Ethernet
- Customized kernel, boot-loader, rootfs & busybox to achieve quick boot-up time
- Cross compile (and back port) open source drivers and library for 2.6 kernel based Linux
- Board bring-up and troubleshoot hardware or firmware related problems
- Create debian package (dpkg) and Firmware update (through web/Over the Air and over HSDL)

Software Engineer Vixs Systems Inc – Toronto 2011- 2012

- Develop/update various device drivers for Linux including AV drivers, troubleshooting the hardware related issues, bug fixing in the sample applications and u-boot customization
- Cross compile & port open source software for different Xcode chips (arc-linux & mips-linux)
- Owner of Windows based NAND/SPI Flash Programming Tool for supporting new Flash chips
- Solve issues raised by the customer by working along FAEs

Embedded Software Engineer Intrigue Tech – Ahmedabad, India 2006-2011

- Software development, code review, board bring-up and troubleshoot
- Develop and maintain automated nightly builds for Linux based projects
- Initiated and moderated knowledgebase program

GPS enabled Golf Cap (SkyKap), using Embedded Linux 2.6

- Board bring-up with boot loader (u-boot) modifications
- Ported drivers for GPS and USB mass storage on Linux
- Power mgmt & battery monitoring and pass appropriate signal to user space application
- Developed APIs for golf course map and firmware update over USB mass storage driver

VOIP based Emergency Phone, using Embedded Linux 2.6

- Developed kernel driver for HPI to interface ARM9 with DSP for exchanging real time audio
- Ported open source H.323, SIP and RTP also customized as per requirement
- Customized red-boot for driving GPIOs and reduce boot-up time

Wi-Fi Enable Voice Recorder (Remember/CLIP)

- Ported eCos on STM32F106, developed drivers for RTC, TIMER, Flash, PWM
- Established audio communication between STM32F106 & AS3527 over I2C & I2S
- Implemented user interface over push button and Low power mode to extend battery life

Bluetooth enabled Smart Lock control (SecuRemote), using eCos RTOS

- Designed protocol to handle data flow between h/w unit (lock), smart phone and server
- Implemented business logic along with third party Bluetooth Stack
- Generate 8 bit mono audio using PWM
- User mode device (and factory) configuration over Bluetooth/Serial

Analog Phone, using DSP-BIOS

- Developed DSP-BIOS driver (TI's C54CST DSP) for hardware audio codec & EEPROM
- Implemented Standard serial boot & achieved boot up time less than 200 ms
- GPIO driver in MSP430 to detect button and keypad events and Power management
- Handling various telephonic events like Ring detection, polarity reversal, DTMF detection
- Designed communication protocol between DSP and sub controller (MSP430)

Jr. Embedded Software Engineer Intrigue Tech – Ahmedabad, India 2005 - 2006

- Prepare software development environment, Testing and Documentation
- Implement low level device drivers for various external devices for 8/16 bit controllers

Single Phase Energy Meter (EMeter), using IAR for MSP430

- Setup software development environment for MSP430FE427 based energy meter
- Establish communication over optical IR for self-calibration using automated test bench
- Implemented custom LCD driver, detect various tampering conditions and perform testing

Data Logger Module (DLM), using AVR studio

- Implemented ADC, GPIO, UART, 7 Segment LCD & EEPROM drivers from reference code
- Involved in building business logic, written test case and perform manual testing

Education

- MASc (Electrical & Computer Engineering)	Ryerson University, Canada	2015
- B.Eng (Computers)	Saurashtra University, India	2005
- Diploma in Computer Engineering	Shree BS Patel Polytechnic, India	2002

References

- Available upon Request

Manish Varma

- San Mateo, CA, US

Contact Information

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- 6478535099

Summary

Seasoned Embedded Systems Professional with proven record of shipping product to the market and beyond. Specialized working on wearable and other resource constrained Firmware development. Starting from Bare-metal to RTOS to all the way Embedded Linux based Firmware development. Device Driver Programming, Kernel Hacking, BSP developmentcustomization, Communication Protocol, UBoot, buildroot. HW troubleshooting and board bring-ups. OTA FW updates, telemetry and remote troubleshooting. Working with offshore team including onsite factory.

Work History

Total Work Experience: 18 years

- **Sr. Embedded Systems Developer Geotab Inc, Oakville**
  Sep 01, 2015
- **Firmware Engineer Verifeye Technologies, Markham**
  Oct 01, 2012
- **Software Engineer Vixs Systems Inc, Toronto**
  Sep 01, 2011
- **Embedded Software Engineer Intrigue Tech, India**
  Jun 01, 2005

Education

- **Masters** | Ryerson University
- **Bachelors** | Saurashtra University

Skills

- **embedded software** - 10 years
- **i2c** - 10 years
- **linux** - 10 years
- **uart** - 10 years
- **hardware troubleshooting** - 9 years
- **spi** - 9 years
- **embedded linux** - 8 years
- **firmware** - 8 years
- **board bring-up** - 7 years
- **real-time** - 6 years
- **open source** - 5 years
- **rtos** - 4 years
- **wireless** - 4 years
- **usb** - 3 years
- **wifi** - 3 years
- **audio** - 2 years
- **dsp** - 2 years
- **arc**
- **arm**
- **arm 9**
- **arm7**
- **ble**
- **bluetooth**
- **c**
- **communication protocols**
- **consumer electronics**
- **cross compilers**
- **debuggers**
- **debugging**
- **device drivers**
- **embedded c**
- **embedded operating systems**
- **embedded systems**

- **gnu debugger**
- **h.264**
- **hardware architecture**
- **ipc**
- **kernel**
- **linux kernel**
- **logic analyzer**
- **microcontrollers**
- **mips**
- **multithreading**
- **open source software**
- **operating systems**
- **power optimization**
- **rs232**
- **schematics**
- **service provider interface**
- **soc**
- **software architecture**
- **software design**
- **software development**
- **software engineering**
- **tcpip**
- **u boot**
- **voip**
- **wearables**

Work Preferences

- Likely to Switch: False
- Willing to Relocate: True
- Preferred Location:
    - San Jose, CA, US
    - Phoenix, AZ, US
    - Chicago, IL, US
- Work Authorization:
    - CA
- Work Documents:
    - Canadian Citizen
- Desired Hourly Rate: 100+ (USD)
- Desired Salary: 130,000+ (USD)
- Security Clearance: False
- Third Party: False

- Employment Type:
    - Full-time
    - Contract - Independent
    - Contract to Hire - Independent

Profile Sources

- linkedin: https://ca.linkedin.com/in/varmamanish
- linkedin: https://linkedin.com/in/manish-varma-00967a25
- linkedin: https://linkedin.com/in/varmamanish
- Dice: https://www.dice.com/employer/talent/profile/de929705488b4937968feeb0d30073e4