

Edwin R. López

Embedded Software/Firmware Engineer



Seasoned engineer seeks position in a team responsible for developing embedded hardware and software solutions including BSPs, SDK APIs, and documentation.

- Programs in **bare-metal C**, **RTOS**, or **Embedded Linux**
- Develops **device drivers** and bootloaders
- Embedded **User Interface Design GUI, HMI, M2M**
- **Study reference designs**, app notes, **datasheets**
- Full-stack engineer: Hardware, **Firmware**, and Applications
- **Client/Server programming** TCP/IP, Wi-Fi, Bluetooth LE
- Performs **cross-compile** builds, **debugging**, testing
- **Schematic & PCB Layout** Design, prototyping, soldering

SKILLS

Embedded Development C/C++ **Embedded Firmware**, **device drivers**, **bootloaders**, inline assembly, linker scripts, system calls porting, DMA, **interrupts** (ISR), timers, **I2C**, I2S, **SPI**, **UART**, PWM, DAC, ADC, 8080/6800 parallel bus, Ethernet, **USB firmware**, **RTOS**, **U-Boot**, **Yocto**, **bitbake**, **Embedded Linux**, **multithreading**, IPC (*queues, signals, pthreads, mutexes*), **TCP/UDP network programming**, **embedded GUI/HMI**, **shell scripting**.

Hardware Development Uses EagleCAD for **Schematic Capture** and **PCB design** of MCU-based **Single Board Computers** (SBC) and peripherals using **ARM Cortex-M**, ARM9, AVR, PIC, 8051, SRAM, SDRAM, NOR, NAND, serial flash, EEPROM, SD/MMC/CF cards, parallel/serial **graphic displays**, CMOS Cameras, Audio CODECs, I/O drivers, sensors, power management ICs/battery chargers (PMIC), **IoT wireless modules** (mesh **802.15.4**, **Wi-Fi**, **Bluetooth** Classic/GATT, GSM, **GPS**). Generates **Gerber** and **BOM** for fabrication and assembly. Works with **JTAG** tools, logic analyzers, oscilloscopes, DMMs, soldering tools, prototype assembly & PCB rework.

Application Development **Cross-browser UI Design**, HTML, CSS, DOM, **JavaScript**, AJAX, XML, **JSON**, **RESTful web services**, **WebSockets**, **TCP/IP**, **UDP**, HTTP, SSL/TLS, **MQTT**, AWS IoT, **Google Maps**, **Object-Oriented Design**, **Java**, Android, Struts, JSP/Servlets, python, PHP, **SQL**, PL/SQL, Oracle, SQLite, MySQL, Tomcat, WebLogic.

Software **GNU Cross-Compiler Toolchains** (*make, binutils, GDB*), **Eclipse** CDT, Atmel Studio (ASF), Visual Studio, IntelliJ, Eagle CAD, **Linux**, VirtualBox, Cygwin, Windows, Wireshark, **Git**/GitHub, SVN, JIRA, MS Office.

EXPERIENCE

2017-Present - Sr. Embedded Systems Engineer, *Panasonic Automotive*

Develops Vehicle-to-Vehicle (V2V) and Infrastructure-to-Vehicle (I2V) communication applications for road safety.

2015-17 Embedded Systems Engineer, *Self-Employed* (see projects at <http://www.lopezworks.info/embedded.html>)

Completed **Embedded Certificate** at CU Boulder. Designed and built custom PCB boards around **ARM Cortex-M SoC**. Acquired hands-on experience embedded development, prototyping, use of lab equipment tools. Developed firmware and drivers to interface hardware devices. Ported open-source libraries to resource-constrained systems. Performed FreeRTOS and embedded Linux board bring-up. Worked in graphical user interfaces GUI/HMI, audio, and wireless control projects.

2011-14 Sr. Software Engineer, *Cardinal Peak*

Developed software for Android USB OTG peripherals, embedded Linux cameras, JavaScript SMART TVs, blue-ray DVD, Facebook Apps, and provided periodic releases for Cardinal Peak's **CaseCracker** video recording Linux product.

2010-11 Open-Source Development, *Self-Employed*

Created **Raster**, a cross-browser UI JavaScript Library used to build rich desktop-like web applications. Raster is free open source software available on GitHub at <https://github.com/erlopez/raster> under the LGPL license.

2008-10 Sr. Software Engineer, *Comcast Cable*

Supported intranet internal applications using Java, Oracle PL/SQL, Eclipse, WebLogic, Spring, Hibernate, and Struts2.

2005-08 - Sr. Software Engineer, *ASG Software Solutions*

Developed **tachyon**, a Java MVC framework designed for building dynamic rich desktop-like web applications.

2004-05 Product Engineer, *GUSDEX LLC*.

Developed the **GUSDex's Personal Business Center**, a solution to help small business market their businesses online.

2003-04 Java Consultant, *Generation21*

Provided development and support for Generation21's line of e-learning Java- and web-based products.

1998-03 Product Development Engineer, *PaeTec Corporation*

Created PL/SQL and Java SDKs to aid development of web-based applications using Oracle (OWA) technology.

1996-98 System Analyst, *XEROX*

Developed UNIX cgi-bin web apps in C using Netscape Enterprise and RealAudio to deliver and online training courses.

EDUCATION & TRAINING

2015 - **Embedded Systems Engineering Certificate (9cr/hr.)** - University of Colorado (CU Boulder)

2003 - Java Programmer (SCJP) and J2EE Web Component Developer (SCWCD) - Sun Microsystems

2002 - **Masters of Science in Information Technology** - Rochester Institute of Technology (RIT)

2002 - Interactive Multimedia Development Certificate (24cr/hr.) - Rochester Institute of Technology (RIT)

1995 - **Bachelors of Science in Computer Engineering** - University of Puerto Rico (UPR Mayagüez)

Personal Data

📍 Address

Northglenn, CO

📞 Phone

Upon request

✉ E-mail

edwin.r.lopez@comcast.net

🏠 Projects Home Page

www.lopezworks.info

Disciplinary Skills

Fast-paced Agile and Waterfall Disciplines

Collaborative in Multi-Disciplinary Environment

Critical thinker, Problem solving skills

Creative, Advanced Multimedia and Graphic Design Skills

Strong Technical Support and Mentoring

Passion for Excellence, Attention to Detail

Social Media

in LinkedIn

www.linkedin.com/in/lopezworks

Languages

English, Fluent

Spanish, Fluent

Watch Demos

▶ [IoT Gateway](#)

▶ [Smart Outlet](#)

▶ [Smart Home Sensor](#)