

# **Kevin Adonai Madrid López**

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## **SUMMARY**

Senior Embedded Software Engineer with 13 years of experience in the automotive industry. Extensive background in Linux-based embedded systems, C/C++, platform integration, and debugging complex issues in production environments. Proven leadership in software architecture, Cybersecurity compliance, and customer interfacing. Strong communicator with a deep understanding of Telematics and real-time systems.

## **EXPERIENCE**

### **Sr. Software Engineer | Continental CES | January 2019 – July 2025 | USA**

- Led Cybersecurity CVE integration efforts for Telematics project, including vulnerability patching and triage support.
- Conducted triage calls with customers to identify root causes in production issues and led a team to implement low-level fixes.
- Implemented Cryptographic security for software update delivery using ECDSA-P384, AES-GCM-256, and SHA-384 verification.
- Designed, implemented, and tested a remote command feature that received execution instructions via a back-end interface and reliably propagated them to the CAN network.
- Designed a test framework to validate lift-gate crane movement logic per OEM specifications.
- Authored software requirements from high-level system specs for trailer lighting and braking systems.

### **Software Integration Engineer | FCA | September 2018 - January 2019 | USA**

- Collaborated with local requirements engineer to make sure requirements were complete and ready for design.
- Produced software design work products from internal requirements to be shared with suppliers.
- Coordinated with suppliers to make sure the implementation made is compliant with design.

### **Sr. Software Engineer | Continental | September 2017 – September 2018 | Mexico**

- Debug in-production technical issues for customers in a fast-paced environment, often with minimal initial information and no logs available, requiring comprehensive system-level understanding and familiarity with subsystem functionality.
- Given the knowledge of Telematics architecture and specific software modules, assisted architects in understanding detailed software aspects necessary to port projects into new systems.
- Leveraged in-depth system and module knowledge to coach new team members, accelerating their learning curve in debugging and issue resolution.

### **Full Software Engineer | Continental | August 2014 – September 2017 | Mexico**

- Ported and maintained UART-based communication protocols serving as the primary communication gateway, facilitating cloud-to-CAN network interactions across Linux-based and RTOS platforms.
- Designed, implemented, and tested a diagnostic configuration module controlled from the cloud using the MQTT protocol interface. Developed the implementation in C with a state-machine design and created isolated unit tests.
- Implemented Bash scripts for unit testing applications using console commands, alongside Python scripts designed to parse system logs into readable debugging information.
- Created scripts and modified existing CAN interface simulations for integration testing.
- Collaborated with international teams, traveling approximately 30% of the time.
- Debugged and resolved issues in multiple modules of the Telematics Control Unit (TCU) for various customers in a dynamic environment.

## **Jr. Software Engineer | Continental | June 2013 – August 2014 | Mexico**

- Designed software modules using UML and Rhapsody based on specifications and high-level architectural designs.
- Implemented modules in C using a Continental-developed multithreading framework.
- Developed test plans and corresponding unit-test applications for software modules.
- Adapted features from existing projects to new system architectures and platforms for the DCM project.
- Operated within a multithreading environment using Continental's internal frameworks providing system messaging, timers, and mutex functionality.
- Maintained UART-based protocols interfacing between microprocessors managing cloud connectivity and CAN.
- Collaborated internationally, spending approximately 40% of the time abroad.
- Supported applications running on Linux-based platforms for ARM quad-core processors.

## **Software Engineer Intern | Continental | June 2012 – December 2012 | Mexico**

- Developed a prototype serving as an alternative control interface for vehicle radios ("Play, Pause, Next, Previous") utilizing EEG signals from NeuroSky technology. Implemented in C with Bluetooth technology to gather data and execute actions. This innovation was part of a Continental initiative involving students from various universities.

## **VOLUNTEER EXPERIENCE**

### **Volunteer – Meditation & Wellness Retreat Support | GBI | October 2025 – January 2026 | USA**

- Assisted in organizing retreat logistics, processes improvement, and event support.
- Contributed to community-focused projects and team-based activities.

## **EDUCATION**

### **BS Electronic Engineering | May 2013 | ITESM**

- President of the Student Society of Electronic Engineers (SAITE); organized events and workshops enhancing technical knowledge and funding scholarships for outstanding students.
- Managed finances and administration as SAITE Treasurer.
- Sales Coordinator for the International Symposium SISCTI.

## **CERTIFICATIONS AND TRAININGS**

### **· Linux Kernel Driver Development Training | November 2021 | Bootlin**

Configured, compiled, and booted Linux kernels; developed kernel modules; driver debugging techniques.

### **· Scrum Bootcamp | June 2015 | Abizzar**

Implemented Scrum methodologies on Continental projects.

### **· Scrum Master Certification | July 2014 | Scrum Alliance**

Certified in Scrum methodologies for software development projects.

## **PATENTS**

### **· Patent: "Hands Accelerating Control System" (US Patent US9315197 B1)**

Developed a hand gesture interface for vehicle acceleration systems (April 2016).

### **· Patent: "Touchless Control of Telematics Module" (Mexico)**

Created a hand gesture-based HMI for vehicle telematics modules.

## **TECHNICAL SKILLS**

**Languages & Scripting:** C, C++, Python, Bash.

**Platforms & Tools:** Linux, RTOS, ARM, Git, GitHub, Gerrit, GNU Build Systems, Makefiles, Geny, Candela, CANoe.

**Protocols & Interfaces:** CAN, UART, MQTT, CAN Databases.

**Generic Concepts:** Embedded Systems, Multi-threading, Debugging, Cybersecurity, CVEs, UML, Agile, Scrum, Software Development, V Cycle, Software Requirements, Software Design, Software Development, Software Validation, Bug Triage.

## **LANGUAGES**

Spanish(native), English (full proficiency).