Reyes, Carlos

PLZ 22049, Hamburg; 12555, Berlin

+49 1 7687793736

jreyesa0901[at]gmail[dot]com

Born in 1991
Name (family, given): Reyes Andrade, Juan Carlos

PROFILE

- **+5 Years of professional experience:** 3 as Embedded Systems Engineer SW/HW (C, Cpp, Git, Altium), 3 as PLC and IPC SW developer (Siemens, Beckhoff) plus academic experience.
- **Perspective:** Applying my experience in areas such as SW Testing for embedded systems (integration, functional, acceptance testing), HW-dependant (hardwarenah) testing, certification of industrial communication modules or assessment of system's reliability.

Soft skills **Autonomy, Self-learning, Flexibility, Proactivity, Order, Pragmatic, Multicultural thinking**

WORK EXPERIENCE

Part-time: Jun 2024 - Now

Independent spare-time IT-Consulting

Independent, Remote

- Code review and software management with Git tools for independent starting tech projects.
- Home-security cameras and modems configuration, integration of electronic prototypes for smart-home applications and basic web pages creation for independent and cultural initiatives.

Full-time: May 2023 - Nov 2023

Software Engineer in Embedded Systems

Eppendorf Liquid Handling GmbH, Hamburg, Germany

- Working together with the SW and QA team to create a new generation of electronic pipettes, employing modern object-oriented techniques with C++ and Git. Incorporating new features such as operating modes, screen buttons, their corresponding actions, as well as unit-, integration- and manual-exploratory tests.
- Migrating and maintaining legacy code in C for electronic pipettes, using GIT and IAR compilation and debugging tools.

Full-time: April 2022 – March 2023
Part-time: April 2020 – March 2022

Embedded Systems Engineer

Neura Robotics GmbH, Hamburg-Metzingen, Germany

- Product development (HW/SW) up to "pre-production" phase (TRL6-7) of an EtherCAT-compatible communication board for an industrial robot arm, using ARM MCU with CMSIS-RTOS and Git tools. (STM32, Microchip's ESC and SOES).
- 2/4/6-layer PCB design with Altium for different prototypes and product care (LED arrays, encoders, IO-interfaces, USB/LAN and EtherCAT boards).
- HW and SW integration-, functional-, exploratory- and smoke tests using TwinCAT and C Debugging Tools.
- Planning/decision-making support for electronic prototypes (FW/HW).
- Pause between August and October 2022 for Master Thesis.

Part-time: Oct 2018 – Jan 2020

Software Developer for IPCs/PLCs

ima-tec gmbh, Würzburg, Germany

- Programming of Beckhoff's IPCs (TwinCAT) for high presicion assembly stations and one integration of a low-weight EPSON Robot in a test-station.
- Integration of a 3D-Vision system into a robotic inspection station using EtherCAT, TwinCAT and Git tools.
- Design of a SDCI (IO-Link)-compatible device up to research prototype (TRL-3) using ARM based STM32 developing board.

Full-time:
July 2016 – July 2018

Automation and PLCs Engineer

BOS Automotive Products Inc, Irapuato, Mexico/Mosonszolnok, Hungary

- Supporting Launch Manufacturing/Quality Engineers during planning, integration and fine-tuning of new Sunroof assembly line and various EOL-Testers.
- PLC and HMI programming using Siemen's TIA PORTAL (S7-1200 and TP700).
- Commissioning of COGNEX Vision Systems.
- Software-oriented training for maintenance of robotic cells.

EDUCATION

2018 – 2022

Master's degree in Information and Communication Systems

Hamburg University of Technology (TUHH), Hamburg, Germany

- Focus: Secure and dependable communication systems and networks
- Non-Technical and relevant modules: Business and Management Module, German Language Master Courses, Literatur und Kultur Deutschkurs, Inter cultural communication.

WiSe 2021

Master Thesis: Communication concept for multi-sensor platform

Institute for Mechatronics (iMEK), TUHH

- Integration of IRIDIUM and LoRaWAN modules into a communication prototype
- Design and documentation of a communication strategy focused on power-saving
- Developing of FW written in C for the communication board
- PCB design with EAGLE and HW-tests of the prototype

SoSe 2020

Research Project: Development of an embedded communication hub for sensor data acquisition in a robotic system

smartPORT Institute, TUHH

- FW/HW Design and implementation of an EtherCAT-compatible communication node prototype, using FreeRTOS and Altium

2010 – 2015

Bachelor's degree in Mechatronics

National Polytechnic Institute (IPN), Mexico

- Topics mainly focused on Electronics, Industrial Applications, Automation and Robotics

SKILLS

Languages

English – Receptive C1, Productive C1 (Full Professional working proficiency)

- IELTS Overall Result Band 7.0

German – Receptive B2.2, Productive B2.1 (Limited working proficiency)

- Goethe Zertifikat B2.1

Spanish – Mother tongue

Relevant technical

Experience with (may not be current focus):

- **Hardware:** ATSAME5x, STM32F4xx(ARM MCU), LAN/USB controllers from Microchip LAN78xx / USB57xx, ESC controller LAN925x, foundations TMS-F2838x (C2000 RT-MPU), IRIDIUM 9603 (Satellite transceiver), ESP32/RFM95W (LoRa transceiver)
- **Design/Simulation IDE:** Altium, EAGLE (PCB design), SolidWorks, OMNET++ (Simmulation of communication networks), UPPAAL (Software Verification),
- **Programming IDEs:** Clion, TwinCAT3, Visual Studio, Eclipse, STM32CubeIDE, basics Code Composer and MPLAB, SIEMENS TIA PORTAL, MATLAB, LabView, Linux-based hardware configuration tools, Linux Bash Terminal, EPSON's IDE for Robot's Controllers, PlatformIO, AVR/Microchip Studio
- **Programming languages:** C for embedded applications, ExST, C++, Python, Ladder (S7), SPEL+ Programming Language
- **Libraries:** SF4 API (AVR Libraries), CMSIS-RTOS, FreeRTOS, STM HAL Libraries, SOES/SOEM open EtherCAT libraries, C2000 APIs , ESP-1ch-Gateway, arduinolmic and others
- **Other SW:** GIT control version tool, MS Office, MS Project, Discourse, Confluence and Jira