Reyes, Carlos

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

PROFILE

Summary

- **Open to following positions:** Embedded systems engineer, software/hardware developer for embedded systems, automation engineer, junior project manager for automation and/or embedded systems in industrial applications.
- **Salary expectation:** 85K €/year (Brutto)
- **Relocation/Availability:** Hamburg, Berlin and surroundings, earliest 2023.05
- **Type of employment:** Full-time and open to remote positions
- **Languages:** English (preferred for technical discussions), German and Spanish.

- **Current topics of interest:** Dependability and security of embedded systems for industrial applications, Cyber-Physical systems, embedded systems (ES), enabling hardware for machine learning (ML), open-source projects, Time Sensitive Networks (TSN), Industrial Internet of Things (IIoT), development of EtherCAT-compatible devices, CAN protocol, interfacing in-house developed devices to industrial networks, project management for technology development. Extra: Languages, politics, psychology and cycling.
- **Professional experience:** 6 years (3 as PLC and IPC developer, 1 as Embedded C developer only, 2 as HW/SW developer for ES). Not counting academical experience.

Soft skills **Autonomy, Self-learning, Engagement, Flexibility, Proactivity, Order**

WORK EXPERIENCE

Full-time:
April 2022 – Present
Duales Studium:
Nov 2021 – March 2022
April 2020 – July 2021

Software Developer for Embedded Systems/Embedded Systems Engineer

Neura Robotics GmbH, Hamburg, Germany

- Full FW/HW development and validation of an EtherCAT-compatible communication board for robot arm, using ARM MCU with CMSIS-RTOS and version control tools (Git). (STM32, Microchip's ESC and SOES)
- PCB re-/design with Altium of 2/4/6-layer boards for different prototypes (LED arrays, encoders, IO-interfaces, EtherCAT boards, etc)
- Planning support for new electronic prototypes

Duales Studium:
Oct 2018 – Jan 2020

Software Developer for IPCs/PLCs

ima-tec gmbh, Würzburg, Germany

- Programming of Beckhoff's IPCs (TwinCAT) and integration of low-weight EPSON Robots in assembly lines and test-stations
- Definition of the SW architecture of a SDCI (IO-Link)-compatible device using ARM MCU (STM32)
- Cooperation in the integration of a 3D-Vision system into a robotic inspection station using Version Control Tools (TwinCAT + Git)

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

**Receptive (Listening and reading), productive (speaking and writing)*

Relevant technical

Currently being used:

- **Hardware:** ATSAME5x, STM32F4xx(ARM MCU), basic TMS-F2838x (C2000 RT-MPU), LAN/USB controllers from Microchip LAN78xx / USB57xx, ESC controller LAN925x
- **Design/Simulation IDEs:** Altium
- **Programming IDEs:** TwinCAT3, Visual Studio, Eclipse, STM32CubeIDE, basic Code Composer and MPLAB
- **Programming languages:** C for embedded applications, Rust (just starting), ExST
- **Libraries:** SF4 API (AVR Libraries), CMSIS-RTOS, FreeRTOS, STM HAL Libraries, SOES/SOEM open EtherCAT libraries, C2000 APIs
- **Other SW:** GIT control version tool, MS Office, MS Project, Confluence and Jira

Experience with, though not a current focus:

- **Hardware:** IRIDIUM 9603 (Satellite transceiver), ESP32/RFM95W (LoRa transceiver)
- **Design/Simulation IDE:** EAGLE (PCB design), SolidWorks, OMNET++ (Simmulation of communication networks), UPPAAL (Software Verification),
- **Programming IDEs:** 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++, Python, Ladder (S7), SPEL+ Programming Language
- **Libraries:** ESP-1ch-Gateway, arduino-lmic and others