



## Reyes, Carlos

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Born 14 March 1991 Full name: Reyes Andrade, Juan Carlos

### PROFILE

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#### Summary

- **Open to following positions:** Embedded systems engineer, software developer for embedded systems, automation engineer, hardware designer, junior project manager for automation and/or embedded systems in industrial applications
- **Salary expectation:** 22K €/year (working student only)
- **Relocation:** Within Germany from 2022.04 on
- **Type of employment:** Part-time and open to remote positions (first 6 months)
- **Preferred language:** English (for technical discussions) and German
  
- **Current topics of interest:** Development of reliable CPS, validation of Software for Embedded Systems (ES), SW correctness for industrial applications, Machine Learning (ML) in ES, Open-source projects, Time Sensitive Networks, Industrial Internet of Things, Project Management for Technology Development, LoRaWAN applications, security, politics, psychology and cycling

### WORK EXPERIENCE

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April 2020 – July 2021

#### Software Developer for Embedded Systems/Electronic Design (Werkstudent)

Neura Robotics GmbH, Hamburg, Germany

- Full Firmware development and validation of an EtherCAT-compatible communication hub using ARM MCU with CMSIS-RTOS and version control tools (Git). (STM32, Microchip's ESC and SOES)
- Full PCB design with Altium and its prototype tests

October 2018 – January 2020

#### Software Developer for IPCs (Werkstudent)

ima-tec gmbh, Würzburg, Germany

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

July 2016 – July 2018

#### Automation and PLCs Engineer

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

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

### EDUCATION

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2018 – present

#### Master's degree in Information and Communication Systems

Hamburg University of Technology, Germany

- Non-Technical relevant modules: Business and Management Module, German Language Master Courses and Literatur und Kultur Course.

SoSe 2020

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

smartPORT Institute - Hamburg University of Technology

- Design and implementation of firmware and PCB using FreeRTOS and Altium, respectively, for an EtherCAT-compatible device

2010 – 2015

## **Bachelor's degree in Mechatronics**

UPIITA, National Polytechnic Institute, Mexico

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

### **Academic Stay (WS 2013)**

Campus Vaihingen, University of Stuttgart, Germany

- Metrology, Control Theory, Image Processing in Industrial Applications and German Language.

## **SKILLS**

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### **Languages**

#### **English – Receptive C1, Productive C1**

- IELTS Overall Result Band 7.0

#### **German – Receptive B2.2, Productive B2.1**

- Goethe Zertifikat B2.1

#### **Spanish – Mother tongue**

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

### **Relevant technical**

Software:

- TwinCAT3 for Visual Studio (ExST Programming Language) and SIEMENS TIA PORTAL
- Eclipse based IDEs for AVR and STM32 Microcontrollers (C)
- EPSON's IDE for Robot's Controllers (SPEL+ Programming Language)
- Academical purposes: MATLAB, UPPAAL (Software Verification), OMNET++ (Simulation of CNs using C++)
- Experience developing mainly with C for ES, good understanding of C++ and Python
- Basics in Linux-based development tools, ALTIUM and EAGLE for PCB design, GIT
- Experience in debugging and test tools for specific ASICs (LAN/USB controllers)

### **Soft skills**

Autonomy, Self-learning, Engagement, Flexibility, Proactivity

## **ACADEMIC-RELATED FACTS**

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WiSe 2021

## **Master Thesis: Communication concept for multi-sensor platform**

Institute for Mechatronics (iMEK) - Hamburg University of Technology

- Communication tests with IRIDIUM and LoRaWAN modules
- Design and documentation of a communication strategy focused on power-saving
- Firmware in C of the communication board
- PCB design with EAGLE and HW-test of the prototype

### **Future professional development:**

- Deepening SW optimization for ARM and RISC-V architectures, RTOS for multi-core applications, optimization of ML in ES, dependability of ES, CPS-related security, energy efficiency in ES, EtherCAT synchronization features for time-sensitive networks, development/integration of ROS-nodes, IIoT, Teamwork and Team-integration, project management for product development