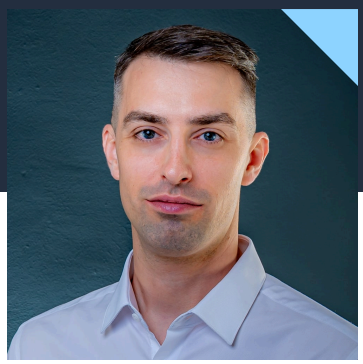
CURRICULUM VITAE

# Andreas L. Frommwieser

International Commissioning Specialist



## MOTIVATION

What drives me is the moment a system runs at full production cycle for the first time. For more than a decade I have been responsible for the software side of commissioning highly automated production lines, with a focus on Beckhoff TwinCAT and robotics. That Bosch, Vitesco and Schaeffler keep bringing me back is the most honest confirmation of my work.

Final acceptances in Spain, Mexico, China, Romania and India: I go for months wherever your project needs me - as owner of Solamec S.L., taking responsibility rather than just working through instructions.


| | |
|---|---|
| 01 | Skills & Specializations |
| 02 | Certificates & Awards |
| 03 | Project Experience |

01

# Skills & Specializations

### AUTOMATION

| | |
|---|---|
| Beckhoff TwinCAT 2 & 3 | MASTER |
| Codesys | EXPERT |
| Siemens TIA Portal | USER |

### ROBOTICS

| | |
|---|---|
| Stäubli | MASTER |
| Epson | EXPERT |
| KUKA | ADVANCED |

### SOFTWARE DEVELOPMENT

| | |
|---|---|
| C | MASTER |
| HTML5, JavaScript, CSS | EXPERT |
| C++, C#, .NET, Java | EXPERT |

### SERVER ADMINISTRATION

| | |
|---|---|
| Headless Linux & UNIX servers | EXPERT |
| Docker containerization & management | EXPERT |
| Web servers, identity & certificate management | ADVANCED |

02

# Certificates & Awards

### LANGUAGES

**German**
NATIVE LANGUAGE

**English**
BUSINESS FLUENT

**Spanish**
SPOKEN AND WRITTEN

### EXPERIENCE ABROAD

**Spain**
4 YEARS

**Mexico**
1.5 YEARS

**China**
1.5 YEARS

**Other: Romania, India, ...**
2.5 YEARS

### CERTIFICATES

**Driving licence: EU**
CLASS B

**Driving licence: mainland China**
CLASS C1

**Awards**
SEE ATTACHMENTS

**Letters of recommendation**
SEE ATTACHMENTS

03

# Project Experience

## 2026

7/2026 - 8/2026 BRAȘOV, ROMANIA

### Schaeffler Group

Software lead, system extension

Four-week on-site assignment to extend the project from 7/2025 to 10/2025. Programmed the control of the newly installed automatic conveyors at two stations, added their manual functions to the operator interfaces and accompanied IO testing and production test runs. Additionally reduced the cycle time of a test station, connected a new MES parameter for traceability of changeovers and automated the backup of the boot data of all stations by script.

Beckhoff TwinCAT 3 | TwinCAT HMI | MES (Manufacturing Execution System) | Automatic conveyor systems | Backup & recovery strategies

6/2026 - 7/2026 CIUDAD JUÁREZ, MEXICO

### Robert Bosch S.A. de C.V.

Software lead, emergency assignment

Emergency assignment after the failure of the rotary table system of a special-purpose machine, with the aim of restarting production as quickly as possible. Was responsible for the software side in a two-person team with the lead mechanic: commissioning and re-parameterization of the replacement drive via IndraDrive, integration into the system software and optimization of the table's motion. Also set up the AOI camera system above the wire dispensing unit and calibrated the force of the HiWin and Jenny Science linear axes to ensure a stable insertion process. After test runs at regular cycle time, the assignment was completed with the end customer's approval and the signed acceptance protocol.

Beckhoff TwinCAT 3 | IndraDrive | Jenny Science Xenax | HiWin linear axes | AOI camera systems

5/2026 - 5/2026 GERABRONN, GERMANY

### Bürkert Werke GmbH & Co. KG

Remote software service, existing system

Remote service on an existing system with a focus on collision avoidance at the welding head. Implemented a delay of the homing movement that is freely configurable through a new station parameter, and extended the message and translation files so that the state can be followed in the sequence trace. Also reworked the automatic sequence, which had continued regardless of the physical state of the welding head and only aborted hard at a late stage; failing to reach the home position is now reported as an error immediately. Finally validated the interlocking of the welding axis in manual and automatic mode.

Beckhoff TwinCAT 3 | PLC programming

5/2026 - 5/2026 MADRID, SPAIN

### Robert Bosch S.A.

Technical lead, controller replacement

Planning and execution of the replacement of a control computer in a running production line. Coordinated hardware selection and licence transfer with manufacturer and customer, set up the replacement controller from the original images, backed up programs and configurations and accompanied integration and restart. In parallel, worked on further issues on the lines: an address conflict in the HMI communication, the error handling of the Kistler press during the homing movement including rollout to all stations, and an axis fault during type changes that had persisted for more than two years. Also trained the customer's programmer so that he can handle recurring tasks independently in future.

Beckhoff TwinCAT 3 | Beckhoff IPC & licence management | TwinCAT HMI | Kistler press systems | Network configuration

4/2026 - 5/2026 BRAȘOV, ROMANIA

### Schaeffler Group

Software lead, type extension

Modernization and safeguarding of several existing systems in a production area as part of an hourly contingent; my focus was the software-side type extension of a production line. Added manual functions for the converted hardware to the operator interfaces, cleaned up navigation logic and messages, completed the translation files and adapted DMC checking and result reporting to the MES. Also found and fixed the cause of sporadically misjudged overall results in the screwdriving processes.

Beckhoff TwinCAT 3 | TwinCAT HMI | MES (Manufacturing Execution System)

2/2026 - 4/2026 BRAȘOV, ROMANIA

### Sonplas GmbH

Lead, hardware integration and production support

After familiarizing myself with the in-house system framework, was responsible for production support and hardware integration at the end customer Schaeffler Group in Brașov. Integrated new automatic scanner systems, extended complex mastering sequences and enabled the dynamic adjustment of robot offsets from the type recipes. Added automatic interface detection and asynchronous connection setup to the cross-station hand scanner connection and rolled the changes out to more than twenty stations after extensive testing. Finally worked on warranty issues including root cause analysis of production stoppages; targeted software extensions clearly reduced micro-stops and noticeably increased system efficiency.

Beckhoff TwinCAT 3 | LabWindows CVI | ANSI C | National Instruments | Keyence | Fanuc robots | Deprag screwdriving systems | Git

2/2026 - 2/2026 GERABRONN, GERMANY

### Bürkert Werke GmbH & Co. KG

Remote software service, existing systems

Provided remote support and software service for existing systems. Implemented process decoupling, improved collision protection during order changes and optimized the station parameters for rejecting faulty parts. The adjustments made resulted in significantly higher process reliability.

Beckhoff TwinCAT 3 | PLC programming

1/2026 - 2/2026 MADRID, SPAIN

### Robert Bosch S.A.

Software lead, line upgrade

Extension and optimization of seven production lines to reduce downtime and increase system safety. Together with the lead mechanic, was responsible for the software integration of the retrofitted camera systems for checking component position in the nest, the retrofit of enabling switches in the safety controller, and the analysis and resolution of process blockages. Implemented the items of the customer's open issues list - including analog value conversion of a distance sensor, MES connection, and welding and station cycle times - at a pilot station and rolled them out to all seven lines after joint testing. Handed over documented software versions and complete system backups to the customer and the client.

Beckhoff TwinCAT 3 | Keyence IV | MES | PNOZmulti

11/2025 - 1/2026 CIUDAD JUÁREZ, MEXICO

### Robert Bosch S.A. de C.V.

Software lead in the conversion team

Rollout of a hardware upgrade on two sensor production lines of the development order from July 2017. Was responsible on site for the software side of the conversion team: commissioning new axis controllers in software, integrating the robot updates and configuring new AOI inspection cameras. After the restart, accompanied the ramp-up of the second line and isolated sporadic faults in the welding process together with the local team and the sister plant in Spain. Handed both lines over to the end customer's series production with a signed final acceptance protocol.

Beckhoff TwinCAT 3 | Stäubli robots | Keyence | IndraDrive | Jenny Science Xenax | EtherCAT

## 2025

10/2025 - 11/2025 MADRID, SPAIN

### Robert Bosch S.A.

Technical lead, station conversion

Conversion of a system station under my technical responsibility, consisting of the replacement of two existing robots with Stäubli CS9 systems and the integration of a camera-based feeding system (bin picking). Carried out the electrical replacement of both robots, supported the mechanical conversion and was responsible for the complete initial commissioning. This included adapting and migrating the existing programs to the Stäubli CS9 standard and teaching the new paths. Programmed the PLC communication interface between the system and the bin-picking cell to connect the feeding system. These measures made material supply considerably more flexible during recipe and type changes.

Beckhoff TwinCAT 3 | Stäubli robots | VAL3 | EtherCAT | Feeding systems

7/2025 - 10/2025 BRAȘOV, ROMANIA

### Schaeffler Group

Lead, station conversion and commissioning

Conversion of two further existing stations of the project from 4/2023 to 7/2023, integrating double screwdriving systems to halve the cycle time and retrofitting an automatic conveyor system at the converted stations. Was responsible for implementing the software changes on the PLC controllers, commissioning and optimizing the new hardware in software under production conditions, and extending the MES connection.

Beckhoff TwinCAT 3 | TwinCAT HMI | Keyence IV | Keyence IX | MES (Manufacturing Execution System) | Deprag screwdriving systems | EtherCAT | Profinet | IO-Link

6/2025 - 6/2025 GERABRONN, GERMANY

### Bürkert Werke GmbH & Co. KG

Lead, remote commissioning

Commissioned an automatic bending system remotely and extended a pneumatic gantry system with Beckhoff TwinCAT 3 to broaden the product range on two of the customer's existing systems.

Beckhoff TwinCAT 3 | Beckhoff ADS communication

4/2025 - 6/2025 SHANGHAI, CHINA

### SMEC Enterprise Development Co., Ltd.

Lead, system optimization

Extended and optimized an existing Beckhoff TwinCAT 3 production system and fixed specific faults. After several years of operation, the customer wanted specific adjustments to make changeover and production processes more efficient. The changes made increased production output by almost 6 %.

Beckhoff TwinCAT 3 | Java | EtherCAT

1/2025 - 4/2025 CHANGZHOU, CHINA

### Bosch Rexroth Changzhou Co., Ltd.

Lead commissioning engineer, production line

Commissioned a further sensor production line modelled on the development order from July 2017, from the mechanical alignment of the system parts to the production-ready handover to the end customer. Carried out the commissioning together with a mechanic and completed it with the OEM's signed final acceptance.

Beckhoff TwinCAT 3 · Stäubli robots · MES · EtherCAT · Keyence IV · Keyence IX · Plasmatreat · Kistler · Amada Miyachi resistance welding · VAL3 · Java · Python · Matlab

## 2024

12/2024 - 12/2024 PUNE, INDIA

### Rheinmetall Automotive

Lead, remote development

Extension of the existing system from my project 2/2023 to 3/2023 at Rheinmetall in India: the customer wanted 148 new recipe parameters integrated. The recipe parameters used by the machine are now assigned automatically by reading a DataMatrix code (DMC) at the start of the production process. After this automatic assignment, the recipe parameters are distributed to various processes within the machine. This allows the customer to compensate for the smallest variations, for example in the moulds of the supplied injection-moulded blanks, through his parameter tables. Coordination began in August 2024; implementation took place entirely remotely in December 2024.

Beckhoff TwinCAT 3

9/2024 - 12/2024 BRAȘOV, ROMANIA

### AKE technologies GmbH

Lead, system extension and training

Extension of the project from 4/2023 to 7/2023 by two additional product types. In this context, accompanied the mechanical and electrical conversion of the corresponding stations on site in Brașov. Also adapted the PLC software to implement new functionality for type changes and programmed the production processes for the new product types. Also trained the service and operating staff on the new machine functions. The project was accepted and closed after a successful performance run.

Beckhoff TwinCAT 3 · TwinCAT HMI · Keyence IV · Keyence IX · Plasmatreat · MES (Manufacturing Execution System) · EtherCAT · Profinet · IO-Link

7/2024 - 8/2024 NUREMBERG, GERMANY

### Vitesco Technologies

Development lead, process module

As part of a new e-mobility product line, supported a Vitesco supplier with the programming of a complete process module. Implementing the safety PLC in TwinSAFE, programming all production steps of the module, and recording data for product tracking through the connected MES were fixed parts of the development order. The production steps I created included inspecting and evaluating blanks using laser measuring systems, implementing communication with the connected Stäubli robot, and cleaning components with plasma. Following this order, at the request of project management, supported further cross-cutting topics up to the machine's pre-acceptance.

Beckhoff TwinCAT 3 | TwinSAFE safety PLC | TwinCAT HMI | Stäubli robots | Keyence IX | Plasmatreat | MES (Manufacturing Execution System) | EtherCAT | IO-Link

5/2024 - 7/2024 BRAȘOV, ROMANIA

### Vitesco Technologies

Development lead, screwdriving modules

As part of a 'volume uplift' order, developed two screwdriving modules modelled on existing systems at Vitesco Romania. The particular challenge was the collision-free programmatic synchronization of the new double gantry systems in each module. The double systems gave the customer a process-optimized production flow that halved the original cycle time. Prepared the screwdriving modules for automated measurement system analyses (MSAs) and, following the example of the existing systems, equipped them with golden sample special sequences, an MES connection, domain integration and host-computer-based material management, among other things.

Beckhoff TwinCAT 3 | TwinSAFE safety PLC | TwinCAT HMI | MSA (measurement system analysis) | MES (Manufacturing Execution System) | Deprag screwdriving systems | EtherCAT | Profinet

4/2024 - 5/2024 BRAȘOV, ROMANIA

### Vitesco Technologies

Lead, test system extension

As part of a 'volume uplift' order, extended the functionality of a leak testing system for finished products with fully automatic execution and data recording of measurement system analyses and semi-automatic execution and data recording of machine capability studies. Then migrated the software of this system to a new, similar system and integrated it into the existing MES and plant network together with the customer's IT team.

Beckhoff TwinCAT 3 | TwinCAT HMI | Machine capability study | MSA (measurement system analysis) | MES (Manufacturing Execution System) | Leak testing systems | EtherCAT | Profinet

3/2024 - 3/2024 CIUDAD JUÁREZ, MEXICO

### Robert Bosch S.A. de C.V.

Lead commissioning engineer, robot cell

Supported the commissioning of system components for a Robert Bosch supplier. Due to staff shortages, the supplier could not carry out the commissioning through to final acceptance itself; it was an Epson robot cell for product palletizing. The Bosch engineers actively recruited me for this task, which I completed to the customer's full satisfaction.

Beckhoff TwinCAT 3 | Epson robots

11/2023 - 3/2024 CIUDAD JUÁREZ, MEXICO

### Robert Bosch S.A. de C.V.

Lead commissioning engineer, production line

Here too, took on the commissioning of a sensor production line modelled on the development order from July 2017, from the mechanical alignment of the system parts to the production-ready handover to the end customer. Brought the line, in a team with a mechanic, through to the OEM's signed final acceptance.

Beckhoff TwinCAT 3 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

## 2023

7/2023 - 11/2023 BRAȘOV, ROMANIA

### Vitesco Technologies

Technical consultant, OEM integration

Owing to my performance and the appreciation it earned in the previous project, I was successfully engaged by Vitesco Technologies for further consulting work and also recommended to its suppliers. This created a wide range of synergies. My main area of responsibility was supporting the integration of further new systems into the OEM's existing infrastructure and passing on my knowledge of the OEM's MES to further suppliers. My work in Romania was successfully completed with the start of production (SoP) of further new systems in the new e-motion inverter production line.

Beckhoff TwinCAT 3 | Machine capability study | MSA (measurement system analysis) | MES (Manufacturing Execution System) | Deprag screwdriving systems | ABB robots

5/2023 - 7/2023 BRAȘOV, ROMANIA

### AKE technologies GmbH

Lead, delivery and commissioning

Delivered the project from 4/2023 to 5/2023 to the OEM in Romania and put it into operation. Acceptance took place in close cooperation with further suppliers of the OEM, such as manufacturers of upstream and downstream special-purpose machines, and the OEM's product and quality engineers.

Beckhoff TwinCAT 3 | Technical integration management | MES | ADS communication | EtherCAT | Profinet

4/2023 - 5/2023 PASSAU, GERMANY

### AKE technologies GmbH

Lead, PLC software and MES connection

My responsibility comprised PLC programming in strict compliance with quality and cycle time requirements and the complete implementation of the MES connection of eleven PLC controllers to the OEM's systems. Successfully integrated technologies such as laser cleaning, Deprag screwdriving systems and Promess joining systems. Seamless communication via ADS, EtherCAT and Profinet and the integration of advanced 3D vision systems from Keyence to optimize production processes were also among my tasks. My work contributed significantly to increasing efficiency and improving production processes. The OEM's end product was an inverter for next-generation e-motion vehicles.

Beckhoff TwinCAT 3 | MES | Laser cleaning | Deprag screwdriving systems | Sealant application | Leak testing systems | Promess joining modules | Kistler measuring systems | ADS communication | Keyence IV | Keyence IX | EtherCAT | Profinet

2/2023 - 3/2023 PUNE, INDIA

### Rheinmetall Automotive

On-site lead, qualification and verification

Conducted intensive training for engineers and operating staff on site in India to familiarize them with the use of the special-purpose machine. I knew how it worked very well from earlier projects of the machine manufacturer, which is why I was requested specifically for this task. Also analysed and fixed critical errors in the source code of the PLC automation software and the Stäubli robot automation. In addition, carried out the necessary measurement system analyses (MSA) and provided proof of machine capability.

Beckhoff TwinCAT 3 | MSA | Machine capability | Project management, on-site management | Optical measuring systems | Stäubli robots | VAL3

11/2022 - 1/2023 HANGZHOU, CHINA

### Sanhua Holding Group Co., Ltd.

Commissioning manager China

As previously at Hanon Systems, completed a further stator winding machine at an OEM in China - here, too, the machine supplier had been unable to carry out the planned commissioning for more than two years due to the travel restrictions in place since 2020. Also optimized the sequences of the Stäubli robot for handling the stators' contact wires and fixed errors in the fully automatic testing process of the manufactured products.

Beckhoff TwinCAT 3 | Project management, on-site management | Stäubli robots | Quality management

## 2022

10/2022 - 11/2022 CHANGZHOU, CHINA

### Hanon Systems EFP (Changzhou) Co., Ltd.

Winding expert and lead programmer on site

Completed a stator winding machine at an OEM in China. Due to the travel restrictions in place since 2020, the machine supplier had been unable to carry out the planned commissioning for more than two years. Brought the project through to final acceptance and also actively helped win a follow-up order for the machine manufacturer.

Beckhoff TwinCAT 3 | Project management, on-site management | Resistance welding technology | Quality management

9/2022 - 10/2022 CHANGZHOU, CHINA

### Bosch Rexroth Changzhou Co., Ltd.

Lead, software migration and hardware upgrade

Also migrated the existing software at the Changzhou site to TwinCAT 3 and installed hardware upgrades in the existing systems of the development order from July 2017 and in their duplicates rolled out over the years: new camera systems, high-precision measuring technology and advanced sensors and actuators. Programmed the new hardware and integrated it into the comprehensive manufacturing execution system (MES).

Beckhoff TwinCAT 3 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

7/2022 - 9/2022 CHANGZHOU, CHINA

### Bosch Rexroth Changzhou Co., Ltd.

Lead, migration and commissioning

Migrated the existing software of a further system to TwinCAT 3 and took on the commissioning of a sensor production line modelled on the development order from July 2017 - from the mechanical alignment of the system parts to the production-ready handover to the end customer. Completed it in a team with a mechanic with the OEM's signed final acceptance.

Beckhoff TwinCAT 3 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

6/2022 - 7/2022 MADRID, SPAIN

### Robert Bosch S.A.

Lead, migration and commissioning

Migrated the existing software to TwinCAT 3 and was responsible for the commissioning of a sensor production line modelled on the development order from July 2017, from the mechanical alignment of the system parts to the production-ready handover to the end customer. Completed the project together with a mechanic with the OEM's signed final acceptance.

Beckhoff TwinCAT 3 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

4/2022 - 6/2022 CIUDAD JUÁREZ, MEXICO

### TBS, Protev Group

Lead, PLC, safety and robot programming

Programmed the Beckhoff TwinCAT 3 PLC, the TwinSAFE safety PLC and three Epson SCARA robots for a high-precision housing assembly machine with a rotary indexing table. Also programmed the optical and laser sensor systems from Keyence for quality control (Keyence IV, Keyence IX) and adapted the TwinCAT HMI to the customer's specific requirements. Successful delivery through to final acceptance of the machine at the OEM site was also among my responsibilities. The planned cycle time was 2.5 seconds; the cycle time achieved was 2.36 seconds.

Beckhoff TwinCAT 3 | TwinSAFE safety PLC | TwinCAT HMI | Weiss rotary indexing tables | Epson robots | Keyence IV | Keyence IX

7/2020 - 4/2022 GERABRONN, GERMANY

### Bürkert Werke GmbH & Co. KG

Lead software developer

In this project, as lead software developer, was responsible for developing innovative semi- and fully automatic winding machines. The exciting challenges included automatic part feeding, precise palletizing of finished parts, flexible product management through a purpose-built order manager, advanced welding processes and comprehensive optical and electronic quality checks. Implementing real-time communication between the machine data and the customer's host computer was also particularly important.

Beckhoff TwinCAT 3 | Beckhoff ADS communication | Festo drive systems | Host computer connection | EtherCAT | Keyence IV | Matuschek Spatz hot-bar welding

## 2020

5/2020 - 7/2020 MADRID, SPAIN

### Robert Bosch S.A.

Lead commissioning engineer, production line

Was again responsible for the complete commissioning process of a further sensor production line modelled on the development order from July 2017, from the mechanical alignment of the system parts to the production-ready handover. Completed the project together with a mechanic with the OEM's signed final acceptance.

Beckhoff TwinCAT 2 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

3/2020 - 4/2020 RIMSTING, GERMANY

### LKV Bayern e.V.

Consultant and developer

On behalf of AFRO-Fluginstrumente GmbH and LKV Bayern, developed a proof-of-concept app for iOS and Android for electronic milking data recording in the food industry. Organizing and integrating suitable transponder chips that meet the strict requirements of the food industry, and working closely with product designers and manufacturers, were exciting parts of the order and led to the development of a customer-optimized transponder ring for milking data recording, intended for international use in Android-based end-customer systems in the food industry.

iOS app development | Android app development | µC microcontrollers | Texas Instruments | NFC technology | RFID transponder technology

11/2019 - 2/2020 CHANGZHOU, CHINA

### Bosch Rexroth Changzhou Co., Ltd.

Lead commissioning engineer, production line

Commissioned a further sensor production line modelled on the development order from July 2017, from the mechanical alignment of the system parts to the production-ready handover to the end customer. Led the project together with a mechanic through to the OEM's signed final acceptance.

Beckhoff TwinCAT 2 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

## 2019

9/2019 - 11/2019 CIUDAD JUÁREZ, MEXICO

### Robert Bosch S.A. de C.V.

Lead commissioning engineer, production line

Again took on the commissioning of a sensor production line modelled on the development order from July 2017, this time at the Ciudad Juárez site, from the mechanical alignment of the system parts to the production-ready handover. Completed it in a team with a mechanic with the OEM's signed final acceptance.

Beckhoff TwinCAT 2 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

7/2019 - 9/2019 BIELEFELD, GERMANY

### Miele & Cie. KG

Software developer, robot standard

Contribution to the development of the latest generation of battery-powered vacuum cleaners at Miele. My role focused on adapting the Miele Stäubli robot standard, which connects the robots to the Miele production system through custom C# and .NET Windows software. This software enabled real-time recording and analysis of robot performance data and direct remote control of the robots from any panel PC. My main tasks included further developing the robot screwdriving control and updating the Miele software to the latest version of the Stäubli robot software to maximize the efficiency and functionality of the systems. Also implemented screwdriving automation in the production process via a Beckhoff TwinCAT 3 PLC and implemented intersystem communication between the Beckhoff PLC and a Siemens PLC via Profinet.

Beckhoff TwinCAT 3 | Stäubli robots | C# | EtherCAT | Profinet | VAL3

3/2019 - 5/2019 CHANGZHOU, CHINA

### Bosch Rexroth Changzhou Co., Ltd.

Lead commissioning engineer, production line

Took on a further commissioning of the sensor production line modelled on the development order from July 2017, from the mechanical alignment of the system parts to the production-ready handover to the end customer. Brought the project together with a mechanic through to the OEM's signed final acceptance.

Beckhoff TwinCAT 2 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

1/2019 - 3/2019 MADRID, SPAIN

### Robert Bosch S.A.

Lead commissioning engineer, production line

At the Madrid site, was responsible for the commissioning of a further sensor production line modelled on the development order from July 2017, from the mechanical alignment of the system parts to the production-ready handover to the end customer. Completed it together with a mechanic with the OEM's signed final acceptance.

Beckhoff TwinCAT 2 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

## 2018

10/2018 - 12/2018 CIUDAD JUÁREZ, MEXICO

### Robert Bosch S.A. de C.V.

Lead commissioning engineer, production line

Took on the commissioning of a further sensor production line modelled on the development order from July 2017, from the mechanical alignment of the system parts to the production-ready handover to the end customer. Completed the project in a team with a mechanic with the OEM's signed final acceptance.

Beckhoff TwinCAT 2 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

7/2017 - 10/2018 MADRID, SPAIN

### Robert Bosch S.A.

Developer and robot programmer

Development of a high-speed system that manufactures high-tech sensors in just 1.8 seconds. These sensors are certified for use in autonomous vehicles. My tasks included programming six Stäubli robots for part handling within the system, creating a data interface for seamless connection to the end customer's MES (manufacturing execution system) for real-time monitoring and control of production, and integrating state-of-the-art manufacturing and testing technologies to ensure the highest quality and reliability of the sensors. Also contributed as part of the team to optimizing the production processes to increase efficiency and reduce downtime.

Beckhoff TwinCAT 2 | Stäubli robots | MES | EtherCAT | Keyence IV | Keyence IX | Plasmatreat | Kistler | Amada Miyachi resistance welding | VAL3 | Java | Python | Matlab

## 2017

5/2017 - 7/2017 KASSEL, GERMANY

### Volkswagen AG

Commissioning support

Accompanied the commissioning of a high-precision process for manufacturing braided stator mats from flat copper strips for a new, high-performance generation of e-motion electric motors, using state-of-the-art drive and robot technology. Braiding the stator mat for a single motor took more than an hour.

Beckhoff TwinCAT 2 | Kuka robots | Volkswagen VKRC standard

4/2017 - 5/2017 STRAUBING, GERMANY

### Delphi Teknoloji

Head of software development

Played a key role in developing a special transducer device for the automated testing of a new generation of digital sensors in diesel rails. These sensors monitored critical pressure and temperature values during the operation of diesel vehicles. Contributed significantly to the hardware development in the team and led the software development for this project.

C++ | ARM | Microcontrollers

4/2017 - 4/2017 NUREMBERG, GERMANY

### Conti Temic Microelectronic GmbH (Continental AG)

Software developer

Successfully fixed errors in the in-house C# inventory management software after a major Windows update had impaired the printing function of the company-wide inventory management. My intervention restored the reliable availability of printing for the inventory lists, so that business-critical processes could continue efficiently.

C C# SVN

## 2016

5/2016 - 8/2016 STUTTGART, GERMANY

### Daimler AG

Lead, robot programming

Developed the software for nine semi-automatic robot modules that used Kuka 6-axis robots for precise sealant application on engine blocks of the Mercedes and AMG brands. This included programming that takes account of the complex geometry of the engine blocks, integration into existing production lines, compliance with strict quality and operational safety standards, and training the operating staff for smooth operation and maintenance.

Kuka robots KR C4

2/2013 - 3/2016 MUNICH, GERMANY

### QAware GmbH, BMW AG

Working student, software development

Worked in the QAware team on a software solution that linked the maintenance, repair and fault memory data of millions of vehicles globally. This data was stored in a database of the end customer and played a central role in improving the service quality of all the end customer's contract partners. While complying with state-of-the-art security standards, the software ensured the seamless provision and synchronization of this information worldwide over many years.

Java Java EE C# .NET Framework SQL databases

## 2015

3/2015 - 7/2015 REGENSBURG, GERMANY

### Ostbayerische Technische Hochschule Regensburg

Programming tutor

As tutorial leader, introduced students to essential programming topics, from functions and inheritance to object orientation, algorithms and GUI programming with JavaFX.

C C++ Java JavaFX Java Swing

10/2014 - 1/2015 REGENSBURG, GERMANY

### Ostbayerische Technische Hochschule Regensburg

Operating systems tutor

As tutorial leader, taught students the fundamental concepts and important techniques for building operating systems, including interrupts, process synchronization, scheduling and memory management.

Processor architecture | Process interoperability

## 2013

3/2013 - 7/2013 REGENSBURG, GERMANY

### Ostbayerische Technische Hochschule Regensburg

Data processing systems tutor

As tutorial leader, taught students in-depth knowledge of the structure and operation of data processing systems and gave an introduction to assembly language programming.

Assembler | ASM86