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Guldberg GmbH
Lilienthalstraße 2
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Regensburg, 09.06.2025

(Junior) Software Engineer Embedded & Integration Application

Respected Mr. Philipp Blobelt,

I am excited to apply for the (Junior) Softwareingenieur (m/w/d) Embedded & Integration position at Guldberg GmbH, a company renowned for its outstanding 4.7/5 Kununu rating, reflecting the success of your “Goldrichtiges Matching” philosophy in fostering trust and satisfaction among engineering professionals. Your commitment to connecting top talent with innovative projects in automotive and IT industries is truly inspiring. I am highly motivated to contribute my embedded systems expertise to support Guldberg’s mission of delivering exceptional engineering solutions.

During Master's program, focusing on IoT health solutions, I utilized STM32CubeIDE and C for firmware development on an STM32 microcontroller to build a wearable health monitoring device. The system integrated sensors for vital signs (temperature, SpO2, heart rate, humidity, ambient temperature, motion) using I2C and SPI for reliable data acquisition, while UART facilitated communication with an ESP WiFi module for wireless data transfer to a local server hosting a web GUI. Key firmware modules were developed to manage sensor polling, GPIO for LED indicators, and an emergency button. I also optimized power consumption for a 5-hour battery life using STM32 sleep modes. The web interface enabled real-time data visualization and historical analysis, accessible via any browser on the local network. Parallel to my academic pursuits, during nine months at AVL, I worked on the Adaptive AUTOSAR middleware (Service Oriented Architecture) and developing its applications in C++. These Adaptive Applications were deployed on a custom Real Time Linux Operating System using Yocto project. After this, I continued at AVL for my Master's thesis, where I was tasked with upgrading their legacy FMU Generation Utility (written in C++) from the FMI 2.0 to the FMI 3.0 standard, thereby enhancing the functionality of the existing tool for Co-simulation of automobile parts build in different systems like MATLAB, C++ etc. In my Thesis, I also leveraged Google Protocol Buffers (ProtoBuf) through ASAM OSI for efficient data serialization, streamlining integration of sensor and environmental models in driving simulations, enhancing virtual testing capabilities. At Persystems, I was a Junior C++ Developer, where I developed Virtual TestBench, a Qt Desktop application for simulations of electrical components, leveraging Persystems' proprietary library. My responsibilities included designing the UI/UX in the Qt Creator IDE with C++ to ensure a seamless user experience. I have also implemented the application's logic by connecting UI widgets to custom slots, using Qt's signal-slot mechanism to manage data flow between the UI and the backend operations interfacing with Persystems' testbench library. Additionally, I have built a separate license check application for Virtual TestBench using Qt and C++.

Drawing from my Master’s work developing IoT health solutions in C and managing C++ projects at AVL, alongside my role at Persystems refining simulation software, I am well-prepared to excel as a (Junior) Softwareingenieur Embedded & Integration at Guldberg GmbH. My experience with Adaptive AUTOSAR middleware at AVL, deployed on real-time Linux via Yocto, equips me to integrate and validate software modules in safety-critical automotive systems, adhering to A-SPICE and ISO 26262 standards. My thesis, upgrading an FMU utility with Google Protocol Buffers for efficient data serialization, demonstrates my ability to analyze and implement changes while producing technical documentation. My collaborative work at Persystems, designing UI/UX for Virtual TestBench, honed my teamwork and coordination skills across departments. With proficiency in C, C++, German, and English, plus a structured approach, I am ready to contribute to Guldberg’s innovative projects, including occasional travel for system commissioning.

Among the many skills I have honed throughout my career, teamwork stands out as the most pivotal. My past experiences have emphasized the fundamental truth that sustainable solutions are often the result of collaborative efforts, rather than individual brilliance. I am eager to become part of the team and am committed to contributing my utmost from the very start, beginning 07.07.2025. However, I remain open to discussing a starting date that best aligns with the team's needs.

I would be greatly honoured to receive an invitation for an interview.

Yours sincerely

Regensburg, 09.06.2025