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EICS Group GmbH
Rüdesheimer Str. 7
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Regensburg, 19.06.2025

Embedded Software Developer Application

Dear Mr. Schefthaler,

I am thrilled to apply for the Embedded Softwareentwickler position at EICS Group GmbH, a company that has recently forged an inspiring strategic partnership in September 2024 with a leading automotive manufacturer to pioneer advanced embedded software solutions for next-generation military vehicles, emphasizing enhanced mobility and safety. Your commitment to pushing the boundaries of embedded systems in the defense sector deeply resonates with my passion for crafting innovative, reliable software for mission-critical applications. I am highly motivated to contribute my expertise to support EICS Group's vision of delivering cutting-edge technology solutions.

During my 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 where I developed IoT health solutions in C and managed complex C++ projects at AVL, alongside my current role at Persystems refining simulation software, I am well-prepared to excel as an Embedded Softwareentwickler at EICS Group GmbH. My hands-on experience with C++ and low-level protocols like I2C, SPI, and UART, demonstrated through my wearable health monitoring device, equips me to develop robust test and functional software for TI Hercules microcontrollers in military vehicle applications. My expertise in real-time Linux systems using Yocto and CAN bus communication, honed at AVL, aligns seamlessly with your requirements for hardware-software integration and first commissioning. My proficiency in CI/CD pipelines with Jenkins and tools like BitBucket and JIRA, combined with my structured approach to debugging hardware through schematics and datasheets, ensures I can drive automated testing and error analysis effectively. Moreover, my collaborative work with hardware teams at Persystems and my fluency in English position me to contribute to EICS Group's interdisciplinary projects, advancing mobility and safety in military land vehicles.

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 immediately.

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

Yours sincerely

Regensburg, 19.06.2025