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XTENDED ENGINEERING GmbH
Knorrstraße 85
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Regensburg, 12.06.2025

Simulator Software Engineer Application

Respected Hiring Team,

I am thrilled to apply for the Simulator Software Engineer position at XTENDED ENGINEERING GmbH, a dynamic force uniting top-tier engineers with transformative projects in automotive and aerospace innovation. Your mission to empower specialists through tailored training and cutting-edge challenges, driving progress across industries, ignites my passion for software development. I am eager to contribute my expertise to XTENDED's vision of mastering complex simulations, propelling technological excellence forward.

During my Master's program, focusing on AI, I primarily used Python and Ubuntu as my development environment to develop applications for AI-driven tasks. One notable project involved autonomous navigation of the Turtlebot3 in a selected area, incorporating object detection and avoidance, while also mapping the area and ensuring the robot could return to its origin. This project utilized ROS (Noetic) and Gazebo for virtual testing, with key ROS nodes developed in both C++ and Python. Additionally, I managed a CI/CD pipeline for software testing and validation against key performance indicators (KPIs). Data from these operations was efficiently stored, analyzed, and optimized using MySQL. 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 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 AI-driven applications in Python and managing complex C++ projects at AVL, alongside my role at Persystems refining simulation software, I am well-positioned to excel as a Simulator Software Engineer at XTENDED ENGINEERING GmbH. My experience with ROS and Gazebo for Turtlebot3 simulations, combined with my thesis on upgrading an FMU utility for co-simulation using C++ and Google Protocol Buffers, equips me to design and implement satellite equipment and space environment models. My proficiency in modern C++ (11/14) and Python, honed in Linux environments, aligns with your need for simulation framework development and testing. At Persystems, I enhanced Virtual TestBench's UI/UX with Qt, demonstrating my ability to improve user front-ends and debugging interfaces. My collaborative work with hardware teams and familiarity with Git and JIRA ensure I can coordinate with customers and internal teams for timely simulator delivery. With strong English fluency and a proactive approach, I am ready to support mission preparation and maintenance, contributing to XTENDED's aerospace simulation advancements.

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, 12.06.2025