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HAT.tec GmbH
Lilienthalstraße 15
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Regensburg, 17.06.2025

Frontend Developer C++ / UI Design / Qt Application

Respected Frau Laura Christin Fischer,

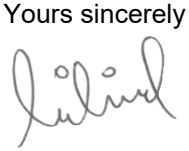
I am excited to apply for the Frontend Developer C++ / UI Design / Qt position at HAT.tec GmbH, a company that continues to redefine innovation in autonomous systems. Your recent strategic partnership with NVIDIA in Q4 2024 to integrate advanced AI-driven Human-Autonomy Teaming technologies into mission-critical systems is truly inspiring, showcasing your commitment to enhancing autonomous decision-making in aerospace and defense. I am highly motivated to contribute my expertise in C++ and Qt-based UI design to support HAT.tec's vision of pioneering intelligent, human-centric solutions.

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 where I developed AI-driven applications in Python and managed complex C++ projects at AVL, alongside my current role at Persystems refining simulation software with Qt and C++, I am primed to contribute effectively to HAT.tec GmbH's mission-critical systems. My hands-on experience designing intuitive UI/UX for Virtual TestBench using Qt's signal-slot mechanism and C++ (14/17) aligns seamlessly with your need for robust, user-focused interfaces that blend functionality with exceptional user experience. My expertise in maintaining scalable, maintainable codebases, demonstrated through CI/CD pipeline management and structured development at AVL and Persystems, ensures I can deliver future-proof software solutions. Additionally, my collaborative approach, honed through proactive stakeholder engagement and teamwork at Persystems, equips me to work closely with your internal teams to translate requirements into high-quality, system-wide solutions, driving HAT.tec's advancements in autonomous technologies.

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



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