Milind
Dessauer StraSSe 1A
86179 Augsburg
Email: milind.official98@gmail.com
Phone: +49-17646501001

ARX Robotics
Gautinger StraSSe 10
82152 Krailling

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Robotics Software Engineer - GUI Application

Respected Hiring Team,

I am thrilled to apply for the Robotics Software Engineer - GUI position at ARX Robotics, inspired by your strategic partnership with Renk Group in July 2025 to integrate the AI-based Mithra OS into military mobility solutions, as reported by Munich Startup. Your commitment to scaling autonomous defense technology globally motivates me to contribute my expertise in Qt and ROS to develop cutting-edge GUI solutions for your unmanned ground vehicles in Krailling.

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. 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 built 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++.

Building on my extensive Qt experience at Persystems, where I developed the Virtual TestBench GUI using C++ and Qt Creator, and my Masters work leveraging ROS for autonomous navigation, I am exceptionally well-suited for the Robotics Software Engineer - GUI role at ARX Robotics. At Persystems, I crafted intuitive UI/UX with MVC architecture and implemented signal-slot mechanisms to ensure seamless data flow, skills directly applicable to designing robust control station interfaces for your UGVs. My Masters project with Turtlebot3, utilizing ROS and ROS 2 for sensor integration and SLAM on NVIDIA Jetson hardware, demonstrates my proficiency in developing real-time robotics software, aligning perfectly with the demands of your Mithra OS integration. My expertise in C++, CI/CD pipelines with Azure DevOps, and Linux systems, combined with my ability to validate hardware-software integrations using Gazebo, ensures I can deliver secure and efficient solutions for ARXs autonomous platforms.

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 honored to receive an invitation for an interview.

Yours sincerely,
Milind