Marija Golubović

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GitHub/LinkedIn/Webpage

Work Experience

Robotics Software Engineer, TECH student 02/2025 – Present
CERN, European Organization for Nuclear Research, Geneva, Switzerland

- Developed a collision avoidance and integrated it with a space exploration techniques and path planning.
- Developed a transform manager to store and compute transformations between robot frames over time.
- Developed a system to map sensor readings into the world coordinate frame.
- Developed a lithium-ion battery monitoring prototype to track power consumption.
- Developing and debugging a C++ robotics software framework, while exploring the integration of various tools to enhance its functionality.
- Testing and validating developed systems both in simulation and on real robots.

Robotics Software Engineer 05/2023 – 02/2025
Spes Robotics, Novi Sad, Serbia

- Developed and trained imitation learning models, collected data, and deployed them on the ULite6 robotic arm to perform pick-and-place tasks. link
- Developed a visual servoing system based on a YOLO model trained on custom-collected data for a grass maintenance robot.
- Designed, implemented, and validated robotic systems in Webots and Isaac Sim simulators.
- Integrated motors, sensors, and cameras into robotic systems using the ROS 2 framework.

Teaching Assistant 10/2023 – 02/2025
Faculty of Technical Sciences, University of Novi Sad

- Hands-on exercises in processor architecture, VHDL design, and FPGA development.
- Compiler design exercises spanning theory and hands-on implementation.
- Real-time operating systems exercises focusing on practical applications, real-time constraints, and parallel/multiprocess execution.

Robotics Software Engineer 10/2021 – Present
Memristor Robotics, Novi Sad, Serbia (Student Competition)

- Developing a ROS 2-based robotic software platform with integrated Docker, Webots simulator, and behavior tree. link
- Integrating various sensors, motors, and communication protocols on mobile robotic platforms using ROS 2.
- Gaining practical experience with electronics and fundamental mechanical systems for robotics applications.

Software Engineer, Team leader 01/2023 – Present
Bosch Future Mobility Challenge, Novi Sad, Serbia (Student Competition)

- Developed image processing and object detection pipelines using the YOLO model and OpenCV to enable autonomous car behavior.
- Implemented multiprocess applications on Raspberry Pi and integrated Raspberry Pi camera and STM microcontroller into system.
- Utilized the Gazebo simulator with ROS for robotic development and testing.
- Led a team, organizing tasks and managing collaboration among team members.

Student Internship 07/2022 – 08/2022
RT-RK, Summer School on Advanced C and Embedded Linux, Novi Sad, Serbia

- Gained experience with advanced C programming, Linux operating systems, and the Linux kernel.
- Worked on writing simple drivers and implementing multithreading.
- Worked intensively with the Raspberry Pi board throughout the entire internship.

Coding Languages/Frameworks/Systems

C/C++, Python 3, C#, Java, Java Script, VHDL , HTML/CSS

ROS 2, Git, Linux OS, Webots, Isaac Sim, MuJoCo, PyTorch, Scikit-learn, Docker, Make/CMake, Behavior Tree, Doxygen

Raspberry Pi, Jetson Nano, FPGA, Arduino, ULite6 robot arms, RealSense/ZED/Raspberry Pi Cameras, LiDAR

Communication and Interpersonal Skills

Communication, Teamwork and collaboration, Adaptability, Working under pressure, Quick learning, Task management

Education

Master with Honours in Electrical Engineering 10/2024 – present
Faculty of Technical Sciences, University of Novi Sad

Master with Honours Electrical and Computer Engineering (GPA: 10/10) 10/2023 – 09/2024
Faculty of Technical Sciences, University of Novi Sad, Serbia

Bachelor with Honours in Electrical and Computer Engineering (GPA: 9.16/10) 10/2019 – 09/2023
Faculty of Technical Sciences, University of Novi Sad

Language Skills

Language	Listening	Reading	Spoken Interaction	Writing
Serbian (Native)	C2	C2	C2	C2
English	C1	C1	C1	C1
French	A1	A1	A1	A1

Table 1: Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

Publications

- Lenka Brestovacki, Marija Golubovic, Jovan Bajic, Ana Joza, Branko Brkljac, Vladimir Rajs , *A low-cost Raspberry Pi based imaging system for analysis of fiber specklegram sensors*, Optical and Quantum Electronics, 56(7), 1261, Springer Jurnal
- Marija Golubović, *End to end robot control based on diffusion model*, Faculty of Technical Sciences, 2024
- Marija Golubović, *Object detection based on YOLOv8 model trained on a dataset enriched with synthetic images*, Faculty of Technical Sciences, 2023

Additional info: Awarded a prize with the team at the Hugging Face Hackathon (June 14–15, 2025) for developing an imitation learning model for a picking task, integrated with real and simulated environments, competing against over 200 teams worldwide.