

# Marija Golubović

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## Work Experience

### Robotics Software Engineer, TECH student

02/2025 – Present

CERN, European Organization for Nuclear Research, Geneva, Switzerland

- Developed a collision avoidance module and integrated with space exploration techniques.
- Developing a transform manager module that store and calculates transformations between robot links over time.
- 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 an imitation learning model, collected data, and deployed it on the Lite6 robotic arm. [link](#)
- Developed a visual servoing system based on a YOLO model trained on custom-collected data.
- Designed, implemented, and tested robotic systems using 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 ROS1 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

Python 3, C/C++, 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, Lite6 robot arms, RealSense/ZED/Raspberry Pi Cameras, LiDAR

# Communication and Interpersonal Skills

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Communication, Team collaboration, Adaptability, Work under pressure, Quickly learn, Task management

## Education

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<b>Master with Honours in Electrical Engineering</b> <i>Faculty of Technical Sciences, University of Novi Sad</i>	10/2024 – present
<b>Master with Honours Electrical and Computer Engineering</b> <i>Faculty of Technical Sciences, University of Novi Sad, Serbia</i>	10/2023 – 09/2024
<b>Bachelor with Honours in Electrical and Computer Engineering</b> <i>Faculty of Technical Sciences, University of Novi Sad</i>	10/2019 – 09/2023

## Language Skills

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Language	Listening	Reading	Spoken Interaction	Writing
<b>Serbian</b> (Native)	C2	C2	C2	C2
<b>English</b>	C1	C1	C1	B2
<b>French</b>	A1	A1	A1	A1

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

## Publications

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- Lenka Brestovacki, Marija Golubovic, Jovan Bajic, Ana Joza, Branko Brkjac, 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.