Matija Žuža

M.Sc Mechanical Engineering
University of Belgrade
Belgrade, Serbia

+381648267142
zuza.matija@gmail.com
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Personal Profile

As a student at the Faculty of Mechanical Engineering, University of Belgrade, specializing in Automatic Control, I am eager to expand my knowledge in the realm of **automation** and **robotics**. Motivated by a passion for continuous learning, I am committed to staying abreast of the latest developments in the field, poised to contribute effectively to industrial automation and control systems.

Education

- **University of Belgrade, Faculty of Mechanical engineering** *oct 2022 – sept 2024*
  M.Sc, module: Automatic Control *(GPA: 9.95/10)*
- **University of Belgrade, Faculty of Mechanical engineering** *oct 2019 – sept 2022*
  B.Sc Mechanical engineer *(GPA: 9.43/10)*

Work experience

- **E-PROJECT** *may 2024 – avg 2024*
  Internship as Automation engineer Belgrade
  - Programming Siemens **PLCs** and **SCADA** systems for **HVAC** systems.

- **NIS academy** *mar 2024*
  Case study Belgrade
  - Two-week internship
  - The study aimed to find the most energy-efficient solution for maintaining a settled water temperature of 20°C.

- **Robotoid** *oct 2022 - oct 2023*
  Automation and electronics Belgrade
  - Member of the student robotics team which developed two-wheeled robots
  - Main responsibility: robot's motion algorithm design
  - Programming motion sequences using **Python**, **C++**, **Arduino**

Software Skills

Programs: Microsoft Office, LaTeX, Antares, AnyLogic, **MATLAB**, **Simulink**, TIA Portal, WinCC, ETS, Eplan, Python, Arduino, C, SolidWorks, FESTO FluidSim, Rapid
Driver Licence: International driving license

Languages

Serbian: Mother language **English**: Proficient **German**: Beginner

Certificates

- **Certificate:** TIA-MICRO1, SIEMENS doo, Belgrade *2023*
- **Certificate:** KNX Basic Course, L-OPHS, Belgrade *2023*

Achievements

- **Faculty of Mechanical Engineering:** Award for the best students x5 *2019 – 2024*
- **Ministry of Education, Republic of Serbia:** Scholarship for exceptionally gifted students *2021 – to date*
- **Ministry of Education, Republic of Serbia:** Republic scholarship *2015 – 2020*

Thesis

- **M.Sc Thesis - Application of Reinforcement Learning Algorithms in Intelligent Buildings** *sep 2024*
  Faculty of Mechanical engineering, Automatic control department

Papers

- **Application of Reinforced Learning in Intelligent Buildings** *sep 2024*
  *SIMTERM - **International conference** on thermal science and engineering of serbia*

Projects

- **Heating System Control** *jan 2024*
  Faculty of Mechanical engineering, Automatic control department
  - Selecting appropriate equipment for managing a heating system with two heating circuits and remote heating control.

- **Robot Mechanics** *jan 2024*
  Faculty of Mechanical engineering, Mechanics department
  - Analysis and modeling of a robot with a minimal configuration (n = 3) in an open kinematic chain using principles of robotics mechanics.
  - Implementation: **Matlab** and **Simulink**

- **EU Erasmus+ project AVATAR** *may 2023*
  *AVATAR – Advanced **Virtual** and **Augmented** Reality Toolkit for Learning*
  - Project during the spring semester financed by the European Commission through the Horizon Europe Erasmus+ programme.
  - We worked on project to conceive, design, integrate and operate a Robotic Work-Cell **Digital Twin** in a laboratory environment at the Manufacturing Engineering, as well as at STIIMA-CNR and POLIMI.
  - Software: **Unity**

- **Pneumatic Control System** *may 2023*
  Faculty of Mechanical engineering, Automatic control department
  - *Objectives*: Develop a control sequence for the system. Enable both automatic and manual operating modes with bumpless transfer. Provide appropriate signaling via LED indicators to show system status, errors, and readiness for operation.
  - *Control and Implementation*: The project was developed using the **TIA Portal** software.

- **Process analysis and control** *may 2023*
  Faculty of Mechanical engineering, Automatic control department
  - Analysis and control of a reservoir process.
  - Determine the **nonlinear** and **linear** mathematical model of the reservoir system.
  - Designing a control system to regulate the process
  - Evaluating the system's performance under various conditions.
  - *Implementation*: **Matlab** and **Simulink**

Extracurricular activities

Football: I was captain of fudball team in Bajina Bašta
Chess: I participated in the national high school championship for students in eighth grade
Tennis: I play tennis recreationally.
Scuba diving