Manuela Moura

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EDUCATION

Federal University of Minas Gerais (UFMG)   Belo Horizonte, Minas Gerais
Bachelor in Control and Automation Engineering - 8th Semester   August 2022 - Expected June 2027

Relevant Coursework: Artificial Neural Networks, Control Engineering, Digital Control, Object Oriented Programming, Real Time Automation, Principals of Autonomous Vehicles, Robotic Manipulators.

WORK EXPERIENCE

Komatsu MTS - Modular,   Belo Horizonte, Minas Gerais
Software Engineering Intern   October 2025 - Present

- Enhanced database connection management and performance by optimizing connection pool configurations, reducing idle connections, and improving API response times.
- Designed and implemented GitHub Actions workflows to automate CI/CD processes, including build testing, version generation, and seamless documentation deployment.

VerLab — Computer Vision and Robotics Laboratory,   Belo Horizonte, Minas Gerais
Undergrad Student Researcher with Scholarship   September 2023 - Present

- Participated in the implementation of an autonomous vehicle for open-pit mining by integrating algorithms and navigation systems using C++, Python and ROS, with deployment across real-world robots (Clearpath's Jackal) and simulation platforms (Gazebo).
- Developed dynamic social simulations using Python and data analysis libraries (scikit-learn, matplotlib, numpy), improving predictive models and visualization of behaviors in simulated environments.
- Built an open-source data analysis library that converts ROSbag logs into actionable metrics and visualizations for path-planning, SLAM, and control algorithms, eliminating manual post-experiment data processing.
- First author of a paper accepted to the Latin America Robotics Symposium.

ACTIVITIES AND VOLUNTEERING

Computer Science Department of Federal University of Minas Gerais, Belo Horizonte, Minas Gerais
Tutor of the discipline Programming and Software Development II   August 2023 - December 2023

- Provided individualized tutoring sessions every week helping students with theoretical computing concepts and with their programming lessons using C++.

SKILLS AND ABOUT ME

- Python
- C/C++
- R

- MATLAB
- Docker / Kubernetes
- Git

- ROS / ROS 2
- Linux
- Gazebo / Coppelia

Languages: Portuguese (Native), English (Fluent)

ARTICLES

- "Adaptive Generalized Social Space Delimitation for Human-Robot Interaction Tasks" – Presented and published at the Latin America Robotics Seminar (LARS), November 2024.

GRANTS AND SCHOLARSHIPS

Fellowship Pathways@RSS, University of Southern California, Los Angeles, Califórnia, EUA
Conference Robotics: Science and Systems (RSS) June 2025
Selected for a fellowship to attend a leading robotics conference, which included workshops on state of art technology and mentorship by an ETH Zurich postdoctoral researcher.

Research Scholarship, Brazil
Fundep — Fundação de Apoio da UFMG August 2024 - Present
Year-long scholarship from Fundep for the research and development of an autonomous vehicle.

Research Scholarship, Brazil
CNPq — National Council for Research and Development September 2023 - August 2024
Year-long scholarship from CNPq for research on mobile robotics path planning and social delimitations algorithms.