

INESC TEC | Research Initiation Grant (AE2024-0408) INESC TEC

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Posted Sep. 26, 2024, set to expire Jan. 26, 2025

Job Title	INESC TEC Research Initiation Grant (AE2024-0408)
Department	CRIIS
Institution	INESC TEC PORTO, , Portugal
Date Posted	Sep. 26, 2024
Application Deadline	Oct. 9, 2024
Position Start Date	Sep. 26, 2024
Job Categories	Graduate Student
Academic Field(s)	Engineering - Other
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Job Description	

Research Opportunities

Mobile Robotics

Work description

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In the logistics sector, the overwhelming majority of cargo currently transported is packed on pallets that are usually handled by pallet trucks or forklifts. In recent times, this sector has been experiencing increasing difficulty in recruiting forklift operators, which is why several autonomous vehicle solutions for automated pallet handling are beginning to appear on the market.

INESC TEC developed a first prototype of an autonomous forklift, based on a Toyota SWE140 forklift, with the aim of having one of these platforms for testing remote control algorithms, autonomous pallet handling and internal demonstrations of these technologies. Meanwhile, a number of possible improvements to this vehicle have been identified, including (but not limited to) the integration of a system to switch between manual and automatic/autonomous operating modes, the sensing of the steering axis and the lifting axis of the forks and the development/parameterization of a safety and emergency stop system.

Thus, the work of this fellowship will involve:

- review documentation, mechanical and electrical designs of the existing vehicle;
- design of 3D parts to implement new functionalities;
- implementation of new components in the robot;
- integration with ROS and Ubuntu;
- calibrations and mechanical adjustments;
- laboratory tests and identification of areas for improvement.

Academic Qualifications

The candidate must be enrolled in a Master's degree in Electrical Engineering, Computer Science or related areas;

Minimum profile required

- The candidate must be enrolled in a Master's degree in Electrical Engineering, Computer Science or

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related areas;

- Experience in hardware, electronic and/or mechanical development;
- Candidate must have experience in C/C++ and/or Python programming.

Preference factors

- Participation in extracurricular activities linked to robotics or automation is valued;
- Knowledge of microcontroller programming is valued.
- ROS programming knowledge and previous practical experience using ROS are valued.

Application Period

Since 26 Sep 2024 to 09 Oct 2024

Centre

Robotics in Industry and Intelligent Systems

Scientific Advisor

[Héber Miguel Sobreira](#)

What we offer

- **Multicultural and collaborative environment**
- A multicultural, international and collaborative environment that makes it easier to exchange ideas, work in networks and create synergies.

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- **International projects**
- The possibility of working in international projects with some of the most important companies in the field.
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- Mentoring with the best researchers in the fields of electrical and industrial engineering, bioengineering, information technology and physics.
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- **Other Benefits and Perks**
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- Annual informal events, such as the multicultural party.

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Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact

Portugal

Contact E-mail rh@inesctec.pt