**INESCTEC**

# CALL FOR APPLICATIONS: RESEARCHER

## Job/position/grant:

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| **Job reference:** | AE2024-0580 ( CRAS-Geral - CRAS ) |
| | INESC TEC - Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência |
| **Job/position/grant:** | RESEARCHER |
| **City:** | Porto |
| **Research field:** | Main: ENGINEERING |
| | Sub: Electrical engineering |

## Job summary:

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| **INESC TEC is accepting applications for 1 RESEARCHER job in the Robotics** | |
| **Scientific Advisor:** | José Miguel Almeida |
| **Start Date:** | 2025-02-01 |
| **Location:** | INESC TEC, Porto, Portugal |

## Job description:

**Work Area:** Robotics

**Project overview:** - Development of a sensory payload that can be integrated into a prototype of an unmanned aerial vehicle to be developed; Develop sensor integration and development of multimodal sensor information fusion software to develop a perception system for detecting obstacles and possible collisions and modeling and mapping on the sea surface; Development of an inspection system for Unmanned Aerial Vehicles, Development of an inventory management system in an industrial environment using Unmanned Aerial Vehicles - Implement the implementation of algorithms in the ROS framework; - Exercise a critical spirit in evaluating the process and results obtained.

**Objectives:** Carry out software development, using the ROS framework, that allows the acquisition of data from sensors on board an unmanned aerial vehicle. Development of hardware that allows the integration of the chosen sensors into the prototype of an unmanned aerial vehicle. Contribute to the goal of improving the positioning accuracy of autonomous vehicles in relation to objects through sensor fusion methods. Development of a software framework necessary for vehicle landing and autonomous charging. Development of an inspection and/or inventory management system using Unmanned Aerial Vehicles.

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| **Academic Qualifications:** | Master's degree in Electrical Engineering or related field. |
| **Minimum profile required:** | Master's degree in Electrical Engineering and over 3 years of proven experience in the development of robotic platforms in terms of hardware and software. Participation in scientific projects and writing scientific documents. |
| **Preference factors:** | - Over 3 years of experience in developing robotic platforms, their conceptualization and design; |
| | - Previous experience in software development using the ROS and ROS2 frameworks; |
| | - Advanced knowledge of C, C++ and Python programming languages, with an emphasis on applications for robotic systems; |
| | - Experience in 3D modeling using Solidworks; |
| | - Previous experience in using simulation tools, such as Stonefish and Gazebo, for testing and validating robots in virtual environments; |
| | - Practical experience in design and production of PCBs, with knowledge of tools such as KiCad; |
| | - Ability to integrate sensors, actuators and other devices into embedded systems, with experience in communication protocols such as I2C, SPI, UART, CAN and RS-232/RS-485; |
| | - Experience in development with FreeRTOS for embedded systems; |
| | - Experience using version control tools, such as Git, for collaborative software development; |
| | - Familiarity with the ARM Cortex-M architecture; |

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| **Funding Entity:** | |
| **Type of contract:** | Uncertain term contract |
| The hiring shall be governed by what is stipulated in the legislation in force regarding uncertain term employment contracts and by INESC TEC norms. | |

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| **Selection criteria:** | The selection of the candidates will be based on the following criteria, in descending order of consideration: |
| | a) Relevant Curriculum in the concerned field of this tender |
| | b) Proven experience. |
| **Disability Incentive:** | Candidates who present a degree of disability equal to or greater than 90% will benefit from an incentive (20) in the score of the CV Assessment. |
| | Candidates who present a degree of disability equal to or greater than 60% and less than 90% will also benefit from an incentive (10) in the score of the CV Assessment. |
| | Said score may, in these cases, exceed 100 points. |
| | Candidates must demonstrate the degree of disability during the application, namely through the submission of the Multi-Purpose Medical Certificate of Disability, issued in accordance with Decree-Law no. 202/96, of October 23 - currently in effect. |
| | Candidates must declare, in the application form, the type of disability used throughout the selection process, in order to proceed with the required adaptations. |

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| **Selection Jury:** | President of the Jury: André Dias; |
| | Member: Hugo Miguel Silva; |
| | Member: Ana Paula Lima; |
| **Notification of results:** | The results of the selection process will be sent to the interested by electronic mail. |
| **Application period:** | From 2025-01-03 to 2025-01-16 |
| **Application submission:** | Electronic form filling in www.inesctec.pt in the section Work with Us |