

## CALL FOR GRANT APPLICATIONS (AE2023-0519)

INESC TEC is now accepting grant applications to award 1 Research Initiation Grant (BII) within the scope of the Co-financed by Component 5 - Capitalization and Business Innovation of core funding for Technology and Innovation Centres (CTI), integrated in the Resilience Dimension of the Recovery and Resilience Plan within the scope of the Recovery and Resilience Mechanism (MRR) of the European Union (EU), framed in the Next Generation EU, for the period 2021 - 2026.

### 1. GRANT DESCRIPTION

**Type of grant:** Research Initiation Grant (BII)

**General scientific area:** COMPUTER SCIENCE

**Scientific subarea:**

**Area of Work:** Computer Vision

**Grant duration:** 6 months, starting on 2024-02-01, with the possibility of being renewed for a maximum term of one year.

**Scientific advisor:** Cláudia Daniela Rocha

**Workplace:** INESC TEC, Porto, Portugal

**Maintenance stipend:** € 541,12, [according to the table of monthly maintenance stipend for FCT grants](#), paid via bank transfer. Grant holders may be awarded potential supplements, according to a quarterly evaluation process (Articles 19, 21 and 22 of the [Regulations for Grants of INESC TEC](#) and Annex II), up to a maximum limit of 50% of the monthly maintenance stipend.

INESC TEC supports costs with registration, enrolment or tuition fees, during the grant duration, under the terms established in the internal document: "[Payment of Tuition fees to grant holders](#)".

The grant holder will benefit from health insurance, supported by INESC TEC.

### 2. OBJECTIVES:

Benchmarking vision-based human pose estimation for upper limb rehabilitation

### 3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

Human pose estimation involves understanding the complex positioning and orientation of an individual's body joints within a single frame or a sequence of images. Beyond its technical aspects, this field has significant impact in different areas such as healthcare, playing a crucial role in interpreting human movement. The precision achieved in human pose estimation has broad applications, from recognizing gestures to advancing rehabilitation and physical therapy. Within the healthcare domain, the adoption of markerless vision-based methodologies minimizes interference with patients while enabling the comprehensive capture of a diverse array of exercises. Therefore, the main goals are: i) select which vision sensors are more appropriate for the considered case study (Kinect, OAK-D, Intel® RealSense, among others); ii) choose one or two state-of-the-art methods for pose estimation; iii) evaluate and compare the pose.

#### 4. REQUIRED PROFILE:

##### Admission requirements:

Degree in Bioengineering, or related areas.

The awarding of the fellowship is dependent on the applicants' enrolment in study cycle or non-award courses of Higher Education Institutions.

##### Preference factors:

Knowledge or experience in image/video processing, 3D data manipulation, machine learning, and deep learning methods

##### Minimum requirements:

Python computer programming. The candidate must be enrolled in a Master's degree in Bioengineering, or related areas.

#### 5. EVALUATION OF APPLICATIONS AND SELECTION PROCESS:

**Selection criteria and corresponding valuation:** the first phase comprises the Academic Evaluation (AC), based on the criteria referred to in Article 12 of the [Regulations for Grants of INESC TEC](#), while the second phase comprehends the Individual Interview (EI). All factors are evaluated on a scale of 0 to 100, taking into account the applicants' merit, suitability and conformity with the preference factors.

The weight of the AC factors are as follows: Academic Qualifications (FA, 45%), Scientific Publications (PC, 5%), Experience (EX, 45%) and Motivation Letter (CM, 5%).

Candidates who score less than 50 points in the AC average will be considered excluded on absolute merit. The top five candidates approved on absolute merit will be qualified for the individual interview. The Final Grade (CF) is obtained by the weighted average of AC (80%) and EI (20%).

##### The Selection Jury is composed of the following members:

President of the Jury: Manuel Santos Silva

Full member: Luís Freitas Rocha

Full member: Marcelo Petry

Substitute member:

**Release of results and prior hearing:** the results of the selection process, as well as the terms and procedures for prior hearing, will be released to the applicants by email, under the terms referred to in Article 13 of the Regulations for Studentships and Fellowships of INESC TEC.

#### 6. FORMALISATION OF APPLICATIONS:

##### Application Documents:

1. Motivation letter;
2. Curriculum Vitae (must include the list of previous fellowships, their type, beginning and end dates, funding entities and host institutions);
3. Certificate or diploma degree;
4. Proof of enrollment in a degree awarding study cycle or in a non degree awarding Higher Education program.
  - The proof of enrollment may be presented just during the grant hiring stage.
5. Signed declaration stating not having benefited from any other research fellowship (Article 5, no. 5)
6. Documental evidence to support the country of residence, residence permit or other legally equivalent document, in cases where the applicant is a foreigner or non-resident in Portugal - valid until the beginning of the grant.
7. Other supporting documents relevant to the final assessment.

Failure to deliver the required documents within the 90-day period after the date of the notice of the conditional awarding of the grant implies its cancellation.

**Application period:** From 2023-12-21 to 2024-01-05

**Submission of applications:** the application will be formalised by submitting the form available in the *Work With Us* section of INESC TEC website.

## 7. BINDING LEGISLATION AND REGULATION

The hiring process shall comply with the current legislation regarding the Research Grant Holder Statute, approved by Law no. 40/2004 of August 18, in its current wording, as well as by the [Regulations for Grants of INESC TEC](#) and for [FCT Grants Regulation in force](#).

For more information, please check the [Regulations for Grants of INESC TEC](#) and relevant annexes at [www.inesctec.pt/bolsas](http://www.inesctec.pt/bolsas)

