

## CALL FOR GRANT APPLICATIONS (AE2024-0446)

INESC TEC is now accepting grant applications to award 1 Research Grant (BI) on the scope AI4REALNET with reference 101119527 funded by the European Commission under the Horizon Europe program for the period 2021-2027.

### 1. GRANT DESCRIPTION

**Type of grant:** Research Grant (BI)

**General scientific area:** COMPUTER SCIENCE

**Scientific subarea:** Informatics

**Area of Work:** Computer Science

**Grant duration:** 3 months, starting on 2024-12-01 with the possibility of being renewed for a maximum term of one year, in cases where the grant has been awarded to students who are enrolled in non-award courses, or up to two years, in the cases of students enrolled in a master's degree.

**Scientific advisor:** Pedro Gabriel Ferreira

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

**Maintenance stipend:** € 990,98, [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:

- Developing and testing algorithms and methodologies for assessing the safety and robustness of implemented AI solutions;
- Development of methodology for risk assessment, aligned with the EU AI Law, in order to map the internal decision-making process of AI-based systems for system control - both in terms of decisions made by the AI system, but also in terms of humans and operators in the vicinity of the system.
- Quantification of reliability and robustness through guidelines on how to create and utilise adversarial AI datasets that encompass all identified risks. Creation of test data sets.

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

- Development of model/process chains that allow AI-based assistants to support human operators' decisions under risk and model uncertainty, and considering human-AI joint learning.
- Develop methodologies to assess the robustness and safety of AI-assisted human decisions, hybrid AI-human co-learning, and fully autonomous AI, considering risk assessment in line with the EU AI Act, as well as quantified reliability and robustness by providing guidance on how to create and use 'adversarial' datasets.
- Validate the methodologies developed on real data and open-source simulators for power grid use cases.
- Disseminate the work in national and international journals and/or conferences

#### 4. REQUIRED PROFILE:

##### Admission requirements:

Degree in Computer Science, Informatics of similar area

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 of Python programming.
- Development of IT tools for use in real environments.
- Knowledge of simulation methodologies.

##### Minimum requirements:

Past experience (or academic training) in Artificial Intelligence Algorithms with a focus on traditional machine learning (shallow learning) and deep learning methodologies. Knowledge of Data Science, including the development of data analysis and visualisation pipelines.

#### 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, 60%), Scientific Publications (PC, 10%), Experience (EX, 20%) and Motivation Letter (CM, 10%).

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 (70%) and EI (30%).

#### 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.

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

President of the Jury: Pedro Gabriel Ferreira

Full member: Ricardo Jorge Bessa

Full member: Rita Paula Ribeiro

Substitute member: João Vinagre

**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 the infringement of the grant holder's duties (article 14, no. 4)
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 2024-10-25 to 2024-11-08

**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)



Funded by the  
European Union