CALL FOR GRANT APPLICATIONS
(AE2020-0212)

INESC TEC is now accepting grant applications to award 3 Research Grant (BI) within the scope of the SAFER funded by Fundo Europeu de Desenvolvimento Regional (FEDER) through the Operational Programme for Competitiveness and Internationalisation - COMPETE 2020 Programme, and by National Funds through the FCT - Portuguese Foundation for Science and Technology, I.P., project (reference POCI-01-0145-FEDER-029583 (PTDC/CCI-INF/29583/2017)

1. GRANT DESCRIPTION

Type of grant: Research Grant (BI)

General scientific area: COMPUTER SCIENCE

Scientific subarea: Informatics

Grant duration: 6 months, starting on 2021-01-01, with the possibility of being renewed until the end of the project.

Scientific advisor: Alcino Cunha

Workplace: INESC TEC, Braga, Portugal

Maintenance stipend: € 805,98, 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.

Costs attributable to INESC TEC may include registration, enrolment or tuition fee stipend, either directly or through reimbursement, during the grant duration.

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

2. OBJECTIVES:

This grant is framed in the context of the project SAFER - Safety Verification for Robotic Software - that has the goal of developing a framework for the verification of safety properties of software developed with the Robot Operating System (ROS). More specifically, the grant is framed in the context of Task 6 of this project, whose goal is to integrate in the HAROS tool several techniques develop in the project for the analysis of ROS code, and has the following goals:
- improve the state of the art in the scientific area of the grant, more specifically in the area of robotic software quality analysis;
- improve and implement in the HAROS tool one of the techniques developed in the project for the analysis of ROS code, namely reimplement one of its model extraction or model checking techniques in order to improve efficiency (namely in systems with large variability);
- develop research skills through the application of the selected methods;
- apply critical thinking in the evaluation of the research methods and results, namely in the evaluation of the effectiveness of the implemented technique using realistic robotic systems.

3. BRIEF PRESENTATION OF THE WORK PROGRAMME AND TRAINING:

This grant complements the standard curricula of computer science degrees, by allowing the grant holder to develop a project (or master thesis) that will help solidify his/her knowledge on formal methods for software engineering. In particular, the grant holder will pursue the following work and training plan:
- identify one of the model-based ROS code analysis techniques previously developed in the project, whose efficiency is currently preventing its application in realistic systems, in particular systems with high variability;
- identify and analyze relevant related work;

- specify and implement a new version of that technique in the HAROS tool
- evaluate the effectiveness of the developed technique through its application to the software of a realistic robotic system;
- write the activity report of the grant.

4. REQUIRED PROFILE:

Admission requirements:

BSc in computer engineering, computer science, or similar
The awarding of the fellowship is dependent on the applicants' enrolment in study cycle or non-award courses of Higher Education Institutions.

Preference factors:

- experience with the Robot Operating System; - knowledge of formal methods.

Minimum requirements:

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 (90%) and EI (10%).

The Selection Jury is composed of the following members:

President of the Jury: Alcino Cunha
Full member: Nuno Moreira Macedo
Full member: José Creissac Campos
Substitute member: Jorge Sousa Pinto

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 dully recognised in Portugal;
   - Documents proving the awarding of academic degrees and diplomas, or the according recognition - in cases of academic degrees or diplomas granted by a foreign higher education institution - can be dismissed in the application process, and replaced by the applicant's declaration of honour, with the verification of said condition taking place during the grant's hiring stage. The submission of the certificate is mandatory when signing the contract.
   - Academic degrees or diplomas awarded by a foreign higher education institution require an authentication by a Portuguese higher education institution, and the corresponding registration on the DGES platform, in conformity with Decree-Law no. 66/2018, of August 16, and Ordinance no. 33/2019, of January 25. More information available on the website https://www.dges.gov.pt/pt/pagina/reconhecimento?plid=374
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 2020-11-24 to 2020-12-09

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