(BL308/2025-IST_ID)

Research Studentships (for students PhD students)

Applications are open for 4 Research Studentships, within the framework of (1801P.01521.1.01) gEICko-101223148 - IST-ID, funded by The European Innovation Council (EIC), under the following conditions:

Scientific Area: Automation, Control, and Robotics

Admission Requirements: *To be enrolled at a PhD.*

Workplan: These PhD grants concern scientific topics in the scope of the EIC Pathfinder project gEICko (Gecko based Innovative Capture Kit for uncooperative and unprepared Orbital assets), focused on the develop a capture kit for docking uncooperative spacecraft, such as satellites and rocket stages, through innovative use of Gecko-inspired micro-patterned dry adhesives (MDA). The topics for the four grants are the following:

1. This grant aims to develop methods based on reachability analysis to design robust MPC controllers for the final approach of a tethered spacecraft for active debris removal.
2. This grant will investigate the rendezvous problem for proximity operation of a tethered spacecraft by combining the closed-form solution of MPC problems using linear models written in orbital elements to improve the accuracy of the trajectory.
3. This grant targets the development and rigorous benchmarking of novel, energy-efficient CAD-based deep learning architectures that fuse visual and inertial modalities for the robust 6D pose estimation and continuous tracking of tumbling, non-cooperative satellites.
4. This grant focuses on novel methods for Fault Detection, Isolation, and Recovery (FDIR) for autonomous spacecraft, exploring the intersection between recent advances in unsupervised and semi-supervised AI-based anomaly detection methods, and model-based systems engineering methods.

Legislation and Regulations: Statute of Scientific Research Fellow, approved by Law nr. 40/2004, of August 18, as worded by Decree-Law nr. 123/2019, of August 28; IST Regulation of Scientific Research Fellowships, available on https://drh.tecnico.ulisboa.pt/files/sites/45/despacho_8532_regulamento_bolsas.pdf

Workplace: The work will be developed at Institute for Systems and Robotics - Lisboa, under the scientific supervision of Rodrigo Ventura (all topics), João Paulo Monteiro (topic 4), Atabak Dehban (topic 3), and Daniel Silvestre (topics 1 and 2).

Duration: The research fellowships will have the duration of 12 months, renewable up to the maximum of 48 months, including the duration of the initial contract. It's expected to begin in March 2026.

Monthly maintenance allowance: the amount of the monthly maintenance allowance is 1309,64€ being the payment method by Wire Transfer.

Selection methods: The selection methods will be the following: *Curriculum evaluation*, with the respective weight of 100.

Composition of the selection Jury: Rodrigo Ventura, João Paulo Monteiro, and Atabak Dehban.

Announcement/ notification of the results: The final evaluation results will be communicated to all applicants by email.

Deadlines and procedures of complaint and appeal. After notification of the provisional list of evaluation results, candidates have a period of 10 working days to, if they wish, make a statement at a preliminary hearing of interested parties, in accordance with Articles 121 et seq. of the Code of Administrative Procedure. The final decision will be made after analyzing the statements presented at the preliminary hearing of interested parties. The final decision may be appealed to the competition jury or to the President of IST-ID within 15 working days of notification.

Application deadline and formalization: The call is open from February 6 until February 12, 2026.

It is mandatory to formalize applications with the submission of the following documents: i) B1 Form – Fellowship application (https://ist-id.pt/recursos-humanos/bolseiros/#documentos-relacionados); ii) *Curriculum Vitae*; iii) motivation letter;.

Applications must be submitted at https://isr.tecnico.ulisboa.pt/scholarships