

(BL156/2025-IST-ID)

### Research Studentships (Master students)

Applications are open for one 1 Research Studentship, within the framework of project (1801P.01158.1.02) LA/P/0083/2020 - ISR - DSOR LAB/ISR, financed by national funds through FCT under the following conditions:

**Scientific Area:** Automation, Control and Robotics (Automação, Controlo e Robótica)

**Admission Requirements:** *To be enrolled at an integrated master or a master.*

**Workplan:** Study, simulation, and computer-based implementation of motion planning algorithms for single and multiple autonomous marine robots as well as cooperative path following. The theoretical work will focus on the use of direct methods of optimal control for trajectory generation and consensus theory for multiple vehicle cooperative control. The work will lead to the implementation of selected algorithms on target computers will be done using C++ and the Robotic Operating System (ROS). Tests of the algorithms will be performed using prototype marine robots that are property of ISR/IST.

**Special qualifications:** Solid background in signals and systems, control, and optimal control. Knowledge of marine vehicle kinematics and dynamics. In depth knowledge of the software tools required for systems implementation on board target computers.

**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; FCT Regulation for Research Studentships and Fellowships, available on <https://www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2019.pdf> and <https://dre.pt/application/file/a/127230968>.

**Workplace:** The work will be developed at the Institute for Systems and Robotics (ISR) of Instituto Superior under the joint scientific supervision of Prof. Rita Cunha and Prof. António Pascoal.

**Duration:** The research fellowship will have the duration of 6 months with the possibility of extension up to the maximum of 24 months, including the duration of the initial contract. It is expected to begin in July 2025.

**Monthly maintenance allowance:** According to the values for Research Fellowships awarded by FCT in Portugal (<https://www.fct.pt/fct-atualizou-o-valor-das-bolsas-para-2025/>), the amount of the monthly maintenance allowance is € 1040,98, being the payment method by wire transfer.

**Selection methods:** The selection methods will be the following: Curriculum evaluation (40%) and Technical and scientific knowledge in software engineering, optimal control, marine vehicle modeling, and and relevant technologies (60%).

**Composition of the selection Jury:** Profs. João Pedro Gomes, Rita Cunha, and António Pascoal.

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

**Deadlines and procedures of complaint and appeal.** A complaint may be lodged from the final decision within 15 working days, or an appeal to the Executive Board of IST-ID within 30 working days, both counted from the respective notification.

**Application deadline and formalization:** The call is open from June 25 until July 8, 2025.

It is mandatory to formalize applications with the submission of the following documents: i) B1 Form – Fellowship application (<https://ist-id.pt/concursos/bolsas/>); ii) *Curriculum Vitae*; iii) academic degree certificate, where applicable; iv) proof of enrollment at an academic degree course (Master, Integrated Master); v) motivation letter;

Applications must be submitted through the website: <https://welcome.isr.tecnico.ulisboa.pt/opportunities/>



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