

CALL FOR 1 RESEARCH FELLOWSHIPS

Applications are open for 1 fellowship Master, within the framework of project/R&D institution HARMONY - Distributed Optimal Control for Cyber-Physical Systems Applications / IST-ID, PTDC/EEI-AUT/31411/2017, financed by national funds through FCT/MCTES (PIDDAC), under the following conditions:

Scientific Area: Electrical Engineering and Computer Science and Engineering

Admission Requirements: The applicant needs to hold a Master degree* in Electrical and Computer Engineering, preferably with a major in Systems and Control. Also, the applicant must have a solid background in control theory, distributed systems, and optimization.

Applicants with foreign degrees shall have the degree recognized in Portugal, (The Jury may decide to admit applicants with foreign degrees without the referred recognition, providing that they obtain the due certificate until the beginning of the contract, in case they are selected.)

Workplan: Broadly, the work focuses on deriving tools to process information in distributed systems, where the raw data is scattered across multiple spatially distributed agents. The overarching goal is to process the scattered data, preferably through distributed algorithms, in order to carry out a system-wide goal. An illustrative example, and a focus of the work, is the design of distributed controllers in which actuators at some agents process the raw data captured in their network neighborhood in order to stabilize an underlying dynamical system; here, the raw data are fragments of the state vector of the dynamical system. Other applications of interest beyond distributed control include distributed inference and distributed learning.

Objectives: design of algorithms for processing distributed data; design of controllers for stabilizing dynamical systems measured at scattered locations; design of distributed detectors and estimators.

Legislation and Regulations: Lei n.º 40/2004, de 18 de agosto (Estatuto do Bolseiro de Investigação Científica) (*Statute of Scientific Research Fellow, approved by Law n. 40/2004, of August 18*); Regulamento de Bolsas de Investigação da Fundação para a Ciência e a Tecnologia em vigor (*Research Fellowships Regulation of the Foundation for Science and Technology in force*) (www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2018.pdf); e Regulamento de Bolsas de investigação do IST-ID (Research Fellowships Regulation of IST-ID).

Workplace: The work will be developed at Institute for Systems and Robotics at Instituto Superior Técnico, under the scientific supervision of Professor João Xavier.

Duration: The research fellowship(s) will have the duration of 12 months. It's expected to begin in June 2019, and may be eventually renewed.

Monthly maintenance allowance: According to the values for Research Fellowships awarded by FCT in Portugal (<http://www.fct.pt/apoios/bolsas/valores>), the amount of the monthly maintenance allowance is € 989,70, being the payment method an option of the Fellow by Wire Transfer/Check.

Selection methods: The selection methods will be the following: *Curriculum evaluation, individual interview**, with the respective weight of 60%/40%.

Composition of the selection Jury: João Manuel de Freitas Xavier, João Manuel Lage de Miranda Lemos, Rita Maria Mendes de Almeida Correia da Cunha.

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

Application deadline and formalization: The call is open from 25/05/2019 until 11/06/2019.

It is mandatory to formalize applications with the submission of the following documents: B1 Form – Fellowship application (<http://ist-id.pt/documentos/bolsas-de-investigacao/>) *Curriculum Vitae*, *academic degree certificate and motivation letter*. Applications must be submitted to the email: jxavier@isr.ist.utl.pt