Oferta de Contrato Predoctoral para la formación de doctores (convocatoria 2019), que está asociada al Proyecto del Plan Nacional **RTI2018-094665-B-I00** del Departamento de Informática y Automática de la Universidad Nacional de Educación a Distancia y que lleva por título:

"Diseño Eficiente y Control Distribuido de Sistemas Ciber-Fisicos (ECoDiC)"

Requisitos:

Podrán ser solicitantes todas aquellas personas que se encuentren matriculadas o admitidas en un programa de doctorado para el curso 2019/2020, en el momento de presentación de la solicitud. También podrán ser solicitantes todas aquellas personas que, en el momento de presentación de la solicitud, no estando matriculadas o admitidas en un programa de doctorado, estén en disposición de estarlo en la fecha en la que se formalice el contrato (tener cursados 300 créditos de estudios universitarios de los que al menos 60 deben ser de nivel máster).

Se valorará:

- Expediente académico
- Conocimientos de Control, Sistemas distribuidos, Sistemas multiagentes.
- Experiencia en programación (ej. Matlab, Python, Javascript).
- Nivel de inglés.

Plazo:

Hasta el día 7 de noviembre de 2019 (14:00 hora peninsular).

En la siguiente página se puede ver la convocatoria y solicitud del Contrato Predoctoral:

http://www.ciencia.gob.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnextoid=14d767e8fd8cd610VgnVCM1000001d04140aRCRD

En **tramitación de la ayuda** se puede acceder a la aplicación telemática de solicitud.

Perfil del director:
http://portal.uned.es/portal/page?_pageid=93,711755&_dad=portal&_schema=PORTAL

Project objectives

The continuous evolution towards more and more distributed and complex systems

makes essential the efficient use of resources, both computational and energetic. Although the restrictions logically depend on the application, the information that the different components of the system must exchange through the network means that, on the one hand, real time restrictions are imposed on the communication system, and on the other hand, the design of control must consider the limitations that the network imposes on the exchange of information. It can be concluded, therefore, that an independent design of communication and control policies is not feasible if it is intended to improve and optimize the use of resources.

The recent proliferation of **Cyber-physical systems** (CPSs in short) is not explained without considering the potential that allow to have in a single integrated device the computing capacity, communication (preferably wireless), and a heterogeneous set of sensors and actuators to provide interaction with the physical system at different levels. In addition, physical constraints, often complex to describe in large-scale systems, must be considered, because of the physical coupling between different parts of the system. Therefore, this project will focus on the **analysis, design and control of CPSs, paying special attention to the development of new control laws that consider the restrictions that the cybernetic part imposes (communication and computing), so that they are efficient from the point of view of the use of resources**. Though these developments are extensible to a large number of areas of interest, those systems that require the coordination of different types of vehicles will guide the application of the results. More specifically, the research will focus on the following points:

1. Control under the restrictions imposed by the communication system.
2. Control under the restrictions imposed by the computing capacity
3. Modeling and control of hybrid systems
4. Developments and experimental implementations for validating the developed techniques