

## PHD GRANTS IN REMOTE AND DISTANCE LEARNING AT THE UNIVERSITY OF DEUSTO

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The University of Deusto invites applications for several PhD projects to be performed in DeustoTech, specifically at the DEUSTEK-MORElab research group. Deusto Institute of Technology -DeustoTech- (<http://deustotech.deusto.es/>) located in Bilbao (Spain), is a Research Institute of the Faculty of Engineering at the University of Deusto, and was created with the mission of promoting research and postgraduate training in Information Technology and Communications (ICT) through the participation in research projects of interest to society and industry. DeustoTech is looking for young researchers in the area of remote engineering applied to learning area. The positions are **directed to master graduates** and they are intended to offer three years fellowships.

### Grant summary

Grants have a duration of 36 months, with annual renewals. Each 12 months the performance of the doctoral student will be evaluated to check if he/she achieves the PhD research goals established for the period. Candidates will be selected by an internal jury. At the last year call, the annual gross salary was 16,450€ for the first two years and 17,625€ for the third year. The application is open to worldwide research applicants.

### Requirements

Candidates should have a first class or honours degree in Electronic Engineering, Computer Engineering or Telecommunications Engineering (other equivalent disciplines will be also considered). **An appropriate degree at Master's Level will be mandatory in order to access to the PhD program** (applicants finishing a Master's degree along this academic year will also be considered). Proficiency in spoken and written English is desired; knowledge of Spanish is not a requirement. To be eligible, **candidates must become a full-time worker at DeustoTech facilities**. All qualified candidates will be considered.

## Closing date and documentation

**April 23th, 2021.** The University of Deusto call closes by **May 7th**, therefore, after April 23th selected candidates will be guided in the application process following the guides lines included at the following link: <https://www.deusto.es/cs/Satellite/deusto/en/university-deusto/admissions-administration-and-grants/scholarships-and-grants-/research-training-grants-programme/beca?cambiodioma=si>

Applicants should forward **their CV, a motivation letter including a summary of research interests** to Javier Garcia Zubia at [zubia@deusto.es](mailto:zubia@deusto.es). If candidates were interested in both below proposed topics, it is also possible, but they must indicate the preferential one.

## Research topics

DEUSTEK-MORElab research team (<https://morelab.deusto.es/>), a class A-research team at the Basque University System, proposes applications for the following PhD projects.

### **Topic 1: Development of a methodology for the application of the concept of adaptive learning in STEM education through remote experimentation.**

The objective of this thesis will be the design and implementation of a methodology that, by means of Learning Analytics techniques, allows a user to know the evolution of his/her learning while experimenting in a remote laboratory based on pre-established learning objectives. In addition, the remote laboratory will have to adapt the laboratory experiments to the user's level. This methodology must be validated on the VISIR remote laboratory.

Requirements of the candidate, not essential, but necessary to develop the work: knowledge of analogue electronics, programming in languages such as Python and HTML5. Interest in learning systems.

**Topic 2: Definition of a reference architecture for the integration of Augmented Reality/Virtual Reality techniques in remote experimentation environments**

The objective of this thesis work consists of the specification of an architecture that allows combining virtual environments or scenarios together with real hardware. Thus, it will allow the user to experiment with virtual devices through real hardware devices. For the validation of the architecture, the design and development of a remote laboratory will be proposed that will allow the control by means of a programmable logic system of an industrial plant developed in a SCADA type environment.

Requirements of the candidate, not essential, but necessary to develop the work are: knowledge of programmable electronics such as VHDL and/or C, languages for the development of virtual environments such as Unity (or others) and mastery of HTML5.