Position Offered: POSTDOCTORAL RESEARCHER
Project: *Multi-modal imaging technology for pre-clinical research*

Technological and scientific fields: Artificial Intelligence, Medical devices, Medical Imaging, Edge Computing

Location: Madrid, Inst. of Physical and Information Technologies, https://www.itefi.csic.es/es

Research Group/PI: Ultrasonic Systems and Technologies Group / Jorge Camacho

PROJECT SUMMARY

Pre-clinical research is essential for the development of new drugs and medical treatments, and requires, in many cases, ad-hoc imaging technologies with high resolution standards and higher performance than those used in the clinical field. In this line, new AI and deep learning techniques have proven to be a disruptive tool, both for the generation of ultrasonic images and for their interpretation. The objective of the project is to train a PhD in digital competences, whose participation will reinforce the development of multi-modal imaging technology for preclinical research being developed by the participating groups, taking advantage of the growing multidisciplinarity in medical imaging among ITEFI groups and with external groups.

PROFESSIONAL PROFILE

Minimum requirements:

- Ph.D. in electronics
- Experience in research/development of ultrasonic imaging systems/methods
- Experience in Python programming language and parallelization using GPUs

Merits to be considered:

- Expertise in artificial intelligence applied to medical imaging
- Knowledge of three-dimensional ultrasonic imaging
- Experience in research results protection and knowledge transfer
- Knowledge in edge-computing electronics (Microcontrollers, embedded Linux, etc.)

WHAT IS OFFERED

The general objective of the project is the development of a multi-modal electronic biomedical imaging technology for pre-clinical research using AI techniques, combining high-resolution three-dimensional ultrasound imaging, positron emission tomography imaging and opto-acoustics, incorporating deep learning methodologies in the formation and evaluation of the images. The specific objectives are O1) The training of a PhD in digital skills and the application of the knowledge acquired to improve the quality of the images obtained and their interpretation O2) The development and publication of an open database with the results obtained through the different technologies developed O3) The strengthening of national and international collaborations of the person hired and the groups involved. The first year will be largely devoted to training in digital competencies, taking an official master's degree in the subject. During the second year he/she will receive training in preclinical imaging, and will start collaborating in the research work, which will last until the end of the project. During the last year, he/she will be in charge of the publication of an open database with the images acquired during the project. The total training load will be equivalent to 240 ECTS credits.

Contract conditions:

Indefinite contract for a Postdoctoral Researcher associated to the Momentum Project of 4 years' duration according to Spanish science law. Gross annual salary (41.000 € - 52.000 €).

Start of contract: before 31 December 2024

PRINCIPAL INVESTIGATOR CONTACT

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