SUMMARY OF SCHOLARSHIPS IN SANTIAGO GRISOLÍA PROGRAMME, 2015 (ANNEX IV)

Purpose

The purpose of this call is to grant scholarships for the training of research personnel in research bodies in the Valencian Community. The goal of these scholarships is to train qualified personnel for R&D tasks, and is aimed at university degree holders from non-Spanish universities, within the corresponding field of research.

Scholarship period

The period of validity covered by the scholarships is three years or until defending one's doctoral thesis, should this be earlier.

Scholarship stipend

1. Scholarships' stipend will be €1,200 monthly (gross). The corresponding IRPF (income tax) will be deducted from this amount.

2. The scholarship also includes an additional stipend of:
€1,600 to cover costs of travel and settling in Valencian Community, during the first year of the scholarship.

3. The research body shall take out an accident insurance and public liability insurance, plus health insurance with coverage for the whole period of the scholarship, if applicants are citizens of countries which have no arrangements with the Spanish Social Security or if insurance coverage of such arrangements were not sufficient.

Prerequisites for candidates

These scholarships are open to people fulfilling the following requirements within the period of submission of applications:
a) A degree from a non-Spanish university in the field of the sciences corresponding to the area of research to which the applicant is applying.
b) Having obtained degree after 1 January 2012.
c) Knowledge of spoken Spanish or English adequate for the development of the tasks involved in the proposed training.
d) Not being in possession of a PhD.

Requisites for acceptance of applications

The scholarship candidate must send the following documents to the head researcher of the project Prof. Valery Naranjo (vnaranjo@labhuman.com) before **10th of March**:

a) Application form (signature may be scanned)
b) Photocopy of NIE (residency permit in Spain) if applicant is in possession of one; photocopy of valid national identity card or passport of your country, for applications from EU member countries.
c) Photocopy of NIE (residency permit) if applicant is in possession of one; photocopy of valid passport for foreign citizens not resident in Spain, or national identity card of your country for applicants from non-EU countries.
d) Photocopy of official academic certificate including your academic title and grades obtained, together with dates, with translation into Spanish.
e) Photocopy of academic degree or deposit made for the issuance of degree.
f) CV

g) Report on your participation in the research project.
h) 2 letters of recommendation.
i) Supporting documents of knowledge of Spanish or English.

Evaluation and selection of candidates

The application will be evaluated by the research body, and the head researcher of the project shall provide a shortlist of a maximum of three candidates sorted by score, according to the following scale:

a) Academic record (30%)
b) Experience related with the applied project (20%)
c) Adaptation of the report to the specific requirements of applied project (30%)
d) Letters of recommendation (20%)

Admission

Beneficiaries must join the corresponding research body within the scheduled period as provided in the award decision. In the event that he/she does not join within the scheduled period, the scholarship will be cancelled, unless the beneficiary has been granted an adjournment period.

Selected candidates from EU-member states must bring a valid, updated European Health Insurance Card

Suspension of scholarship

The directorate-general of Universidad, Estudios Superiores y Ciencia may authorize an adjournment of incorporation for the scholarship holder, if he/she so requests, and when justified, with the agreement of the head of the corresponding research body and of the legal representative of said body, for a period of no more than three months from the date agreed in the award decision. The request must be applied for in advance.

If the holder does not join the research body once the authorized adjournment period has expired, it shall be understood that the beneficiary renounces the scholarship.

The adjourned period may not be recovered.

Temporary suspension of scholarship

Authorized voluntary suspensions shall not exceed 6 months over the whole period of scholarship and during such suspension period no stipend shall be paid. The period of suspension cannot be recovered.

If the holder does not return after the period of suspension has expired, it shall be understood that the beneficiary renounces the scholarship.

Follow-up of scholarship

The directorate-general of Universidad, Estudios Superiores y Ciencia will carry out an annual scientific follow-up of the work being developed by the scholarship holder. For this purpose, between 1 and 30 November each year, the scholarship holder must submit the following documentation in standard print:

– a report on the research work and the results obtained, including a work plan for the coming year.

– a report from the head of the research body overseeing the project, evaluating the work undertaken and the need for its continuity.

– Declaration of responsibility by scholarship holder affirming that he/she still fulfils the

requisites called for in the announcement of the Santiago Grisolia

Workplace

LabHuman (www.labhuman.com)

Instituto Interuniversitario de Investigación en Bioingeniería y Tecnología Orientada al Ser Humano.

Universidad Politécnica de Valencia (Spain)

Work area

Image Processing

Title of the project

ACRIMA - Fundus image processing for automatic screening of ophthalmological diseases

Project summary

The World Health Organization estimates that 285 million people are visually impaired in the worldwide. In addition, aging population and chronic disease increase are two factors that provide a higher number of blindness cases in the future. Diabetic retinopathy (DR), chronic simple glaucoma and macular degeneration (ARMD) are the most frequently causes of vision loss and even blindness nowadays. Although in recent years, the number of cases has been significantly reduced, it is estimated that the 80 % of cases of visual impairment is preventable or treatable. The early diagnosis of these diseases allows, through appropriate treatment, to reduce costs generated when they are in advanced states and may become into chronic. This fact justifies screening campaigns. However, a screening campaign requires a large workload of trained experts in the analysis of anomalous patterns of each disease, which, added to the increase in at-risk population, makes these campaigns economically unfeasible. Therefore, the need of automatic screening system developments is highlighted.
The objective of this project is the development of an automatic screening system for the three most significant diseases related to visual impairment: glaucoma, DR and ARMD. At present there is no screening system in the world as the proposed in this project, that combines the screening of these three diseases. There are some initiatives focused on glaucoma or RD but they have very low specificity, resulting in a low effectiveness of screening systems.
In this project, we propose new image processing algorithms focused not only on the detection of pathological patterns but also on the definition and detection of the "normal" retina. In addition, some advances will be carried out incorporating into automatic methods new markers that are currently used in clinical diagnosis but not in automatic detection. Moreover, these advances will be combined to define a new detection model that incorporates other clinical data to image features. For that reason, the final system resulting from the project will be more robust and with enough specificity and sensibility (both higher than 90 %) facilitating its application in clinical practice.

Skills and capabilities of the candidate
- Programming (Matlab, C++, etc.)
- Image processing
- Computer vision
- High level of English or Spanish

General tasks of the candidate
- State of the art of some project topics
- Implementation of some "reference algorithms"
- Research and implementation of new algorithms or improved reference algorithms
- Validation and comparison of new and reference algorithms.
- Paper dissemination in conference and journals.