



Department of Informatics

**Pos-doctoral grant: 2 (two)**

**November 9, 2016**

*Opening of two post-doctoral grants under the AGATHA project – Intelligent system for the analysis of open surveillance /crime control information sources (IDT-COP-18022), funded by the PORTUGAL 2020 program, in the following conditions:*

**Scientific area**

*Informatics / Computer science*

**Admission requirements**

*PhD in Computer Science (or related area) with work developed in the area of Artificial Intelligence. It will be a preferential factor to have participated in research projects.*

**Work plan**

*The overall goal of the project is to develop a tool for criminal investigation police and intelligence services to facilitate the collection of evidence of criminal practices. The system will use all information available from open sources and will automatically analyze this information. These sources of information include social networks, forums, images, blogosphere information and other sources of information on the web, including audio and video sources. These sources also include web broadcast media such as radio or TV.*

**Visual Analytics**

*The advanced visualization component provides users with a presentation of results that highlights elements of interest, probable relationships, patterns, or the presentation of the data in an implicit chronological order of the gathered evidence. The following tasks are envisaged:*

- 1. State of the art update in the areas covered by the project; knowledge acquisition on the area of automatic visual representation of analyzed content; analysis of development tools.*
- 2. Technical specification of the components of access, visualization and exploitation of information, as well as definition of data presentation methods; definition of communication components.*
- 3. Development of the various components and implementation of the respective functionalities. Development of communication components and cross-solution components. Development of optimization on prototyped versions.*
- 4. Integration of the base and transverse components to the solution. Integration of the Visual Analytics components, its modules, services and features. Integration of different software components.*

5. *Testing of the Visual Analytics components, communication and cross-solution components; testing of the implementation of the corresponding software, integration of the various versions of the prototype and optimization issues.*
6. *Collaboration in the production of Promotion and Disclosure material. Participation in scientific events. Elaboration of articles for publication in the specialty journals.*
7. *Writing of technical reports, deliverables and material for the preparation of intellectual property records and participation in technical meetings.*

### **Semantic text analysis**

*The analysis of information sources aims to identify elements that indicate illegal procedures or the detection of patterns that, without a systematic and automated approach, would not be detectable. In this way, the textual content of the information sources will be evaluated using semantic and ontological analysis methodologies, which allow to relate this information with reference databases. The following tasks are envisaged:*

1. *State of the art update regarding analysis and cross-referencing information tools for different languages.*
2. *Specification of the modules of topic detection, entity extraction and dialogue detection.*
3. *Development of the modules of topic detection, entity extraction and dialogue detection and support to the remaining development tasks.*
4. *Integration of the modules of topic detection, entity extraction and dialogue detection. Participation in other integrations.*
5. *Testing of the semantic text analysis components, communication and cross-solution components; testing of the implementation of the corresponding software, integration of the various prototype versions and optimization issues.*
6. *Collaboration in the production of Promotion and Disclosure material. Participation in scientific events. Elaboration of articles for publication in the specialty journals.*
7. *Writing of technical reports, deliverables and material for the preparation of intellectual property records and participation in technical meetings.*

### **Legislation and applicable regulations**

*The granting of the Research Scholarship will be carried out by means of a contract between the University of Évora and the scholar, under the terms of the Research Grants Regulation of the University of Évora (Service Order n.1/2011), of the Scientific Research Grantee (Law n.40/2004 of August 18, and Law n.202/2012 of August 27) and in accordance with the legislation and Regulation of Advanced Training and Qualification of Human Resources of the FCT.*

### **Workplace**

*The work will be developed in the Department of Informatics of the University of Évora, under the scientific guidance of Prof. Teresa Gonçalves and Prof. Paulo Quaresma.*

### **Duration of the scholarships**

*The scholarships will last for 12 months, starting in January 2017. The scholarship contract may be renewed up to a maximum of 33 months.*

**Monthly maintenance allowance**

The amount of the scholarship corresponds to € 1495 (one thousand, four hundred and ninety five euros), according to the table of values of scholarships directly attributed by FCT, I.P. (<http://fct.pt/apoios/bolsas/valores>); payments are made monthly by check or bank transfer.

**Selection Methods**

The selection method to be used is the following: curricular evaluation and interview, with their respective valuation of 70% (seventy percent) and 30% (thirty percent), respectively.

**Composition of the Selection Jury**

President: Prof. Dr. Paulo Miguel Torres Duarte Quaresma

1<sup>st</sup> Member – Prof. Dr. Teresa Teresa de Freitas Gonçalves

2<sup>nd</sup> Member – Prof. Dr. José Miguel Gomes Saias

1<sup>st</sup> Substitute – Prof. Dr. Luís Miguel Mendonça Rato

2<sup>nd</sup> Substitute – Prof. Dr. Pedro Dinis Loureiro Salgueiro

**Form of publication/notification of results**

The evaluation final results will be publicized using an alphabetically ordered list posted in a visible and public place of the Department of Informatics of the University of Évora, and the candidate will be notified by e-mail.

In accordance with the right of prior hearing of the interested parties, the Final Classification proposal will be announced by any written means to all interested parties.

**Application Deadline and Application Form**

The call is open from November 21 to December 5, 2016 and the selection results will be published until December 12, 2016.

Applications must be formalized, obligatorily, by sending an application letter accompanied by the following documents: Curriculum Vitae, certificate of qualifications and other supporting documents considered relevant.

Applications must be mailed or e-mailed to:

Prof. Teresa Gonçalves

Departamento de Informática da Universidade de Évora

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