2018-01142 - [WIMMICS] Explainable Artificial Intelligence

Contract type: Public service fixed-term contract
Level of qualifications required: Graduate degree or equivalent
Function: PhD Position

About the research centre or Inria department
The Inria Sophia Antipolis - Méditerranée center counts 37 research teams and 9 support departments. The center's staff (about 600 people including 400 Inria employees) is composed of scientists of different nationalities (250 foreigners of 50 nationalities), engineers, technicians and administrators. 1/3 of the staff are civil servants, the others are contractual. The majority of the research teams at the center are located in Sophia Antipolis and Nice in the Alpes-Maritimes. Six teams are based in Montpellier and a team is hosted by the computer science department of the University of Bologna in Italy. The Center is a member of the University and Institution Community (ComUE) "Université Côte d'Azur (UCA)".

Context

Assignment
Robots helping humans in performing their everyday activities are becoming nowadays very popular, given the valuable impact they may bring on society, e.g., robots assisting elderly people in their places to support them in their everyday tasks. However, in order to concretely interact with humans, intelligent systems are required to show some human-like abilities such as the ability to explain their own decisions.

The research question we target for this PhD position is "how to explain and justify machine decisions to humans?". The domains are Artificial Intelligence, and more specifically Machine Learning, Deep Learning, Argumentation (as KRR formalism intended to explain decision making) and Semantics (knowledge graphs).

Main activities
The objectives of this PhD position are:

- The gathering of bibliographical content to constitute a solid basis for working on the following development.
- The definition of an explanation framework, such that the results provided by the intelligent machine aiming to support humans in taking decisions are explained and justified to the users.
- The explanation framework will be evaluated following the effectiveness criteria of explanations proposed in social sciences and both a formal and a user evaluation is planned.
- The scientific results obtained during the postdoc will be published in top conferences and journals in Artificial Intelligence.

Skills
The candidate must hold a Master in Computer Science, with a specialization on the Artificial Intelligence field. He must have strong skills on the field and possibly in some frameworks and languages related to it, knowledge on the Natural Language Processing field might also help. An experience with Machine Learning frameworks is strongly advised. Finally, he must have good English skills in writing and communication.

Benefits package
- Subsidised catering service
- Partially-reimbursed public transport
- Social security
- Paid leave
- Flexible working hours
- Sports facilities

Remuneration
Duration: 36 months
Location: Sophia Antipolis, France
Gross Salary per month: 1982€ brut per month (year 1 & 2) and 2085€ brut/month (year 3)

General Information
- Theme/Domain: Data and Knowledge Representation and Processing
- Information system (BAP E)
- Town/city: Sophia Antipolis
- Inria Center: CRI Sophia Antipolis - Méditerranée
- Starting date: 2018-11-15
Duration of contract: 3 years
Deadline to apply: 2018-12-15

Contacts
- Inria Team: WIMMICS
- Recruiter: Villata Milanesio Serena / serena.villata@inria.fr

About Inria
Inria, the French national research institute for the digital sciences, promotes scientific excellence and technology transfer to maximise its impact. It employs 2,400 people. Its 200 agile project teams, generally with academic partners, involve more than 3,000 scientists in meeting the challenges of computer science and mathematics, often at the interface of other disciplines. Inria works with many companies and has assisted in the creation of over 160 startups. It strives to meet the challenges of the digital transformation of science, society and the economy.

Conditions for application

Defence Security:
This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST). Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

Recruitment Policy:
As part of its diversity policy, all Inria positions are accessible to people with disabilities.

Warning: you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.