2017-00184 - [ WIMMICS] Open PhD position at QWANT search engine and INRIA on Artificial Intelligence: Argument Mining and Emotions

Level of qualifications required: Graduate degree or equivalent
Other valued qualifications: Master
Function: PhD Position

About Inria

Inria, the French National Institute for computer science and applied mathematics, promotes "scientific excellence for technology transfer and society". Graduates from the world's top universities, Inria's 2,700 employees rise to the challenges of digital sciences. With its open, agile model, Inria is able to explore original approaches with its partners in industry and academia and provide an efficient response to the multidisciplinary and application challenges of the digital transformation. Inria is the source of many innovations that add value and create jobs.

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

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Context

The ANSWER project is leaded by the QWANT search engine and the INRIA Sophia Antipolis Méditerranée research center. This proposal is the winner of the "Grand Challenges du Numérique" (BPI) and aims to develop the new version of the search engine www.qwant.com with radical innovations in terms of search criteria, indexed content and privacy of users. The scientific and technological challenges addressed by the project consider several evolutions of the Web to adapt to them on the one hand (heterogeneity of data) and to anticipate them on the other hand (personalization and respect for privacy, increase in granularity and number of criteria for qualification of Web content). This job description describes one of the open positions within this project.
Assignment

Assignments

This position will be attached to Inria. The field of emotion analysis and sentiment analysis is not new, and it is often oriented towards the analysis of the emotions of the users and the determination of the polarity of a text, i.e., the text is positive or negative. In the ANSWER project, we aim to tackle the opposite challenge, namely we aim to answer the following research question: how to indicate to the user which are the emotions characterizing the results of her search in order to make it a criterion of choice? We focus on powerful algorithms to define new criterions for filtering search results, i.e., the expression of a feeling in the answers found by the search engine. The final goal is to extract effective and scalable indicators of sentiment, emotions, and argumentative relations in order to offer the users additional means to filter the results selected by the search engine.

Main activities

Main activities

We aim to address the above mentioned issue with an innovative approach, so that the textual elements to which we wish to associate a polarity will no longer be considered in their individuality but connected to each other by polarized relations to be analysed in a higher level setting. The three main tasks of this PhD thesis will be:

1) Automatic detection of emotions and sentiment in the text (i.e., the association of a positive/negative polarity to a paragraph based on the polarity of the terms present in the text).
2) From the annotated data in step (1), prediction of the polarity of relations between the text spans with the combination of argument mining methods for relation prediction and emotion detection techniques.
3) Active Learning approach to improve sentiment analysis algorithms, based on predicted relations predicted in step (2).

Skills

- Master degree in Computer Science or Computer Engineering is required.
- Programming skills.
- Basic knowledge of Natural Language Processing and Machine Learning is preferred.
- Fluent English required, both oral and written.

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**: 3/1/18
Duration of contract: 3 years
Deadline to apply: 1/31/18

Contacts

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

Conditions for application

Application file: Applications must be submitted online on the Inria website. Collecting applications by other channels is not guaranteed.

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.