Offre n°2025-08844

Post-Doctoral Research Visit F/M Generating high-quality explanations of implicit arguments in controversial debates

Type de contrat : Fixed-term contract

Niveau de diplôme exigé : PhD or equivalent

Fonction : Post-Doctoral Research Visit

A propos du centre ou de la direction fonctionnelle

The Inria centre at Université Côte d'Azur includes 42 research teams and 9 support services. The centre's staff (about 500 people) is made up of scientists of di?erent nationalities, engineers, technicians and administrative staff. The teams are mainly located on the university campuses of Sophia Antipolis and Nice as well as Montpellier, in close collaboration with research and higher education laboratories and establishments (Université Côte d'Azur, CNRS, INRAE, INSERM ...), but also with the regiona economic players.

With a presence in the fields of computational neuroscience and biology, data science and modeling, software engineering and certification, as well as collaborative robotics, the Inria Centre at Université Côte d'Azur is a major player in terms of scientific excellence through its results and collaborations at both European and international levels.

Contexte et atouts du poste

Motivation

Argumentation is a core mechanism of human reasoning, decision-making, and communication. In real-world debates, arguments are rarely fully explicit; they often rely on implicit knowledge, shared assumptions, or omitted premises. Recovering these missing elements is crucial for enabling machines to understand, interpret, and reason over natural language arguments.

This postdoctoral project focuses on the generation and evaluation of explanations of implicit arguments. The goal is not only to produce plausible explanations, but also to rigorously assess the quality of these explanations. For this purpose, we will extend and test in practice the methodology developed in “An Axiomatic Study of the Evaluation of Enthymeme Decoding in Weighted Structured Argumentation” (arXiv:2411.04555) by Victor David and Anthony Hunter. This framework provides a formal foundation for evaluating the quality of explanations based on multiple logical, structural, and semantical criteria.

Beyond the formal study, this postdoctoral project aims to bring our framework into real-world use by applying it to natural language arguments. We will evaluate the quality of generated explanations from real debates, combining formal criteria from arXiv:2411.04555 (adapted to natural language arguments) with NLP metrics such as BERTScore and repetition rate. If needed, we also plan to define new task-specific metrics better suited to this setting. In addition, we intend to carry out a human evaluation to assess how the generated explanations are perceived according to various criteria, such as clarity, informativeness, and plausibility, in order to support their interpretability and practical relevance.

Our long-term objective is to contribute to the understanding and mediation of complex debates, such as those involving environmental issues, where arguments span multiple dimensions (e.g., economic, environmental, moral, societal). In such contexts, making implicit reasoning steps explicit (and doing so in a structured and high-quality way) is essential to support constructive dialogue, critical thinking, and informed decision-making.

An Active Collaboration

Thanks to the collaboration between Inria Sophia Antipolis and University College London (UCL), and more specifically through the recently established Inria–UCL Associated Team EXPLAINER, a postdoctoral position may be funded (salary = 2 927€) based on the strength of the application. The selection will be made among the best applications submitted across all Inria associated teams. The results will be announced on July 4th.

Since October 2023, a strong collaboration has been in place between Anthony Hunter and Victor David, focusing on the evaluation and explanation of implicit arguments. The postdoc will further benefit from the involvement of Serena Villata and Elena Cabrio, who bring extensive expertise in natural language arguments and will support the project as part of the associated team.

Mission confiée

Assignments & Collaboration

With the help of Victor David and Anthony Hunter, the recruited person will build upon existing symbolic and formal models of implicit arguments to design learning-based methods and evaluation metrics. The objective is not to propose new symbolic models, but rather to translate and operationalize these theoretical insights into computational approaches for explanation generation and evaluation. Victor and Anthony will provide close guidance to ensure the proper transfer and integration of formal knowledge.

In parallel, the postdoctoral researcher will work in close collaboration with Serena Villata and Elena Cabrio, experts in natural language processing (NLP) and argument mining, who will supervise the NLP components, dataset exploration, and empirical evaluation protocols. This interdisciplinary framework ensures that both formal rigor and empirical relevance are at the core of the project.

Principales activités

The postdoctoral researcher will:

• Design methods for generating textual explanations of implicit arguments.
• Develop and apply evaluation frameworks to assess the quality of the explanations.
• Identify existing datasets related to controversial debates, such as environmental discourse.
• Participate in collaborative research and publications.

Compétences

The candidate must hold a PhD in Computer Science, with expertise in the following areas:

- Natural Language Processing (NLP).
- Argument Mining or Computational Argumentation.
- Knowledge Representation, Logic-based Reasoning, or Implicit Reasoning (optional but desirable).

- Experience in writing scientific publications and presenting research results.

Language: English.

Avantages

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking (after 6 months of employment) and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage

Rémunération

Gross Salary: 2788 € per month

Informations générales

- **Thème/Domaine :** Language, Speech and Audio
  Information system (BAP E)
- **Ville :** Sophia Antipolis
- **Centre Inria :** Centre Inria d'Université Côte d'Azur
- **Date de prise de fonction souhaitée :** 2025-11-01
- **Durée de contrat :** 2 years
- **Date limite pour postuler :** 2025-06-02

Contacts

- **Équipe Inria :** MARIANNE
- **Recruteur :**
  David Victor / victor.david@inria.fr

A propos d'Inria

Inria est l’institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 215 équipes-projets agiles, en général communes avec des partenaires académiques, impliquent plus de 3900 scientifiques pour relever les défis du numérique, souvent à l’interface d’autres disciplines. L’institut fait appel à de nombreux talents dans plus d’une quarantaine de métiers différents. 900 personnels d’appui à la recherche et à l’innovation contribuent à faire émerger et grandir des projets scientifiques ou entrepreneuriaux qui impactent le monde. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 200 start-up. L'institut s'e?orce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

L'essentiel pour réussir

About the Centre

The Inria Centre was established in 1983 and became Inria Centre at Université Côte d'Azur in 2003. Its dynamism is part of the development of the Sophia Antipolis and Nice sites, with Université Côte d'Azur. Since 2003, it has also had a branch in Montpellier, in partnership with the University of Montpellier.

Inria Sophia Antipolis is one of the major research centers of Inria. Located in the heart of Sophia Antipolis, the center benefits from a unique ecosystem bringing together academic research, innovation, and industry. Inria Sophia Antipolis hosts a vibrant research environment focused on artificial intelligence, geometry, heterogeneous data and modelling, computational medicine, neuroscience and biology, and collaborative robotics for open and dynamic environments.

It employs 700 scientists, researchers, and innovation support staff of 55 nationalities.

Context

Every year, Inria's International Relations Department offers a few postdoctoral positions to support Inria's international collaborations.

The postdoctoral contract will have a duration of 12 to 24 months. The default start date is November 1st, 2025, and no later than January 1st, 2026.

The postdoctoral fellow will be recruited by one of the Inria Centres in France, but it is recommended that the time be shared between France and the partner’s country.
Please note: the postdoctoral fellow must begin their contract in France, and all visits must comply with Inria’s mission rules.

Assignment
Candidates for postdoctoral positions are recruited after the end of their Ph.D. or after a first postdoctoral period.

- For candidates who obtained their Ph.D. in the Northern Hemisphere, the defense date must be after September 1, 2022.

- For candidates in the Southern Hemisphere, the defense date must be after April 1, 2022.

To encourage mobility, the postdoctoral position must take place in a scientific environment that is truly different from that of the Ph.D. (and, if applicable, from any position held since the Ph.D.). Particular attention is paid to French or international candidates who obtained their doctorate abroad.

Instructions to Apply
Please contact victor.david@inria.fr to submit your application, in addition to the submission on jobs.inria.fr.

Deadline for Application
June 1, 2025

Attention: Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par d'autres canaux n'est pas garanti.

Consignes pour postuler

Sécurité défense :
Ce poste est susceptible d'être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L'autorisation d'accès à une zone est délivrée par le chef d'établissement, après avis ministériel favorable, tel que défini dans l'arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l'annulation du recrutement.

Politique de recrutement :
Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.