



Offre n°2020-02893

Memetic Semantic Genetic Programming for Trustable AI

Le descriptif de l'offre ci-dessous est en Anglais

Type de contrat : CDD

Niveau de diplôme exigé : Thèse ou équivalent

Fonction : Chercheur contractuel

Niveau d'expérience souhaité : De 3 à 5 ans

A propos du centre ou de la direction fonctionnelle

Located at the heart of the main national research and higher education cluster, member of the Université Paris Saclay, a major actor in the French Investments for the Future Programme (Idex, LabEx, IRT, Equipex) and partner of the main establishments present on the plateau, the centre is particularly active in three major areas: data and knowledge; safety, security and reliability; modelling, simulation and optimisation (with priority given to energy).

The 450 researchers and engineers from Inria and its partners who work in the research centre's 28 teams, the 60 research support staff members, the high-level equipment at their disposal (image walls, high-performance computing clusters, sensor networks), and the privileged relationships with prestigious industrial partners, all make Inria Saclay Île-de-France a key research centre in the local landscape and one that is oriented towards Europe and the world.

Contexte et atouts du poste

H2020 European Project TRUST-AI (Transparent, Reliable and Unbiased Smart Tool for Artificial Intelligence), call FETPROACT-EIC-05-2019.

Mission confiée

Assignments:

The main assignments of the recruited researcher will be to fulfill tasks devoted to Inria within the TRUST-AI project (see below).

It is expected that this leaves some time for the candidate to pursue her own research, in link with other members of the team if possible.

Collaboration:

The recruited person will be in connection with all partners of the TRUST-AI project, but will have the opportunity to work with the other members of the TAU team based on common interests.

Responsibilities:

The person recruited is responsible for the work package of the TRUST-AI project that is lead by Inria (evolutionary approaches to trustable AI), including coordination with other partners, writing of the deliverables.

S/he will also be responsible for the parts devoted to Inria in other work packages.

Principales activités

The main activities of the recruited person will be the usual activities of full time researchers involved in a collaborative research project:

- Do a complete bibliographic study of trustworthy AI, including, but not exclusively, on evolutionary approaches
- Extend the existing Memetic Semantic GP (MSGP, reference below): to regression problems, to constrained problems, etc
- Collaborate with the U.Delft team on their GP-GOMEA approach
- Propose alternative approaches, linked or not to MSGP and COMEA
- Design and run experiments, on synthetic data and on the partners' use cases
- Write reports and deliverables for the TRUST-AI project

- Participate to project meetings (by visio conference, or physical, virus permitting)

Bibliography:

[Memetic Semantic Genetic Programming](#) Robyn Ffrancon, Marc Schoenauer *Genetic and Evolutionary Computation Conference (GECCO 2015)*, Jul 2015, pp.1023-1030

[Greedy Semantic Local Search for Small Solutions](#) Robyn Ffrancon, Marc Schoenauer *Companion Proceedings (workshops) of the Genetic and Evolutionary Computation Conference*, Jul 2015, pp.1293-1300

Compétences

Strong programming skills in Python are required.

Being fluent in English is a must.

Work will take place in Saclay (20km south of Paris), within the INRIA/CNRS/Univ. Paris-Saclay TAU team, under the supervision of Marc Schoenauer, and of course in collaboration with the other partners of TRUST-AI.

Contact: Marc.Schoenauer@inria.fr

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

Salary in regard to professional experiences

Informations générales

- **Thème/Domaine** : Optimisation, apprentissage et méthodes statistiques
Statistiques (Big data) (BAP E)
- **Ville** : Palaiseau
- **Centre Inria** : [Centre Inria de Saclay](#)
- **Date de prise de fonction souhaitée** : 2020-10-01
- **Durée de contrat** : 3 ans
- **Date limite pour postuler** : 2020-12-31

Contacts

- **Équipe Inria** : [TAU](#)
- **Recruteur** :
Schoenauer Marc / Marc.Schoenauer@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'efforce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

L'essentiel pour réussir

The successful candidate should have at least 2 years experience after PhD, preferably in Genetic Programming and Evolutionary Computation, but experts from other areas of Machine Learning are welcome to apply.

She will have full responsibility of one work package of the project, dedicated to evolutionary approaches to trustable Machine Learning and AI, in collaboration with the other partners of the project, in particular with Peter Bosman's team at Delft University and CWI, as far as evolutionary computation is concerned. Hence some experience in management of small project is more than welcome.

In such context, autonomy and creativity are absolutely mandatory.

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.