



Offer #2024-07153

Temporary scientific engineer / A platform for synthetic data generation and privacy evaluation / PhD or equivalent

Contract type : Fixed-term contract

Level of qualifications required : Graduate degree or equivalent

Fonction : Temporary scientific engineer

About the research centre or Inria department

The Inria University of Lille centre, created in 2008, employs 360 people including 305 scientists in 15 research teams. Recognised for its strong involvement in the socio-economic development of the Hauts-De-France region, the Inria University of Lille centre pursues a close relationship with large companies and SMEs. By promoting synergies between researchers and industrialists, Inria participates in the transfer of skills and expertise in digital technologies and provides access to the best European and international research for the benefit of innovation and companies, particularly in the region. For more than 10 years, the Inria University of Lille centre has been located at the heart of Lille's university and scientific ecosystem, as well as at the heart of Frenchtech, with a technology showroom based on Avenue de Bretagne in Lille, on the EuraTechnologies site of economic excellence dedicated to information and communication technologies (ICT).

Context

This engineer position will be supported by the CAPS'UL project. The position will be based in the MAGNET team in Lille, in very close collaboration with the Lille Hospital.

The CAPS'UL project objective is to promote digital health culture for current and future healthcare professionals. Part of the project concerns the design of a high-performance tool for practical situations, enabling concrete and effective collaboration between the various training, socio-economic and medico-social players in the implementation of training courses. It will provide a credible immersive environment (real software and simulated healthcare data) and teaching scenarios for the entire teaching community.

The INRIA MAGNET team (and hence the recruited collaborators) will contribute to this project by researching machine learning algorithms for synthetic data generation with privacy constraints and dedicated to training.

Assignment

The recruited engineer will collaborate with colleagues in the MAGNET team and the CAPS'UL project consortium. In particular, the work will contribute to build a platform for synthetic (longitudinal) data generation together with a toolbox for privacy auditing. The main originality lies in the definition of data utility as it should reflect the variety of situations that can help professionals in a training context.

All developed software will be open-source.

Main activities

The principal activities will be in two steps.

- First period
 - Select and gather state of the art implementations of machine learning methods for synthetic data generation
 - Extract and prepare health data for training machine models
 - Generate synthetic data and evaluate privacy with state of the art attacks
 - Test algorithms and run experiments
- Second period
 - Design and prototyping of key algorithms
 - Create appropriate tests and documentation
 - Integrate such implementations in the CAPS'UL platform
 - Test algorithms and run experiments

Skills

- Strong background in Computer Science
- Strong programming skills in Python
- Background in privacy and machine learning
- Prior experience in the health domain will be an asset

Benefits package

- 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 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

Remuneration

According to profile

General Information

- **Theme/Domain** : Data and Knowledge Representation and Processing
Software engineering (BAP E)
- **Town/city** : Villeneuve d'Ascq
- **Inria Center** : [Centre Inria de l'Université de Lille](#)
- **Starting date** : 2024-10-01
- **Duration of contract** : 2 years
- **Deadline to apply** : 2024-09-30

Contacts

- **Inria Team** : [MAGNET](#)
- **Recruiter** :
Tommasi Marc / Marc.Tommasi@inria.fr

About Inria

Inria is the French national research institute dedicated to digital science and technology. It employs 2,600 people. Its 200 agile project teams, generally run jointly with academic partners, include more than 3,500 scientists and engineers working to meet the challenges of digital technology, often at the interface with other disciplines. The Institute also employs numerous talents in over forty different professions. 900 research support staff contribute to the preparation and development of scientific and entrepreneurial projects that have a worldwide impact.

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.

Instruction to apply

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.