



**Offer #2023-06821**

## **Post-Doctoral Research Visit F/M Personalized patient follow-up**

**Contract type :** Fixed-term contract

**Level of qualifications required :** PhD or equivalent

**Other valued qualifications :** PhD degree

**Fonction :** Post-Doctoral Research Visit

**Level of experience :** Recently graduated

### **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**

The recruitee will join the [BIP-UP project](#)

This project is based on a collaboration between Scool and a medical team at Inserm/CHU de Lille that have been active for 5 years now.

The scientific goal of this collaboration is to investigate the exploitation of data to improve patient follow-up after surgery. We model this problem as a sequential decision making under uncertainty problem.

This collaboration has already produced interesting results, in the form of a website, presentations in conference, and publications in top machine learning conferences, and top medicine journals.

This collaboration involves about 10 people: data engineer, PhD student, post-doc, researchers, professors.

### **Assignment**

The recruitee will work in close relation with both teams, Scool and the Inserm team.

With Scool, the goal is to explore how the problem at hand can be modeled, most likely as a contextual bandit problem, propose algorithms, study their theoretical properties.

With the Inserm team, the goal is to investigate the application of this work to the real practical case.

These two lines of work are intrinsically strongly tied to each others.

### **Main activities**

The main activities are those of a post-doc:

- finding and studying the related literature
- proposing ideas to address the problem at hand
- investigating these ideas on both fronts: theoretically, and from the application point of view.
- present the work to the members of the project and work with them to go further
- write papers to be submitted to top conference in ML/AI, and in top journals in medicine
- present the work in international scientific events
- animate the collaboration

## Skills

A strong background in machine learning, in particular in bandit theory, is especially required.

Skills in practical aspects of statistics/data science are necessary, the more elaborate the better.

Scientific communication skills (speaking, writing).

## 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

## General Information

- **Theme/Domain** : Optimization, machine learning and statistical methods  
Statistics (Big data) (BAP E)
- **Town/city** : Villeneuve d'Ascq
- **Inria Center** : [Centre Inria de l'Université de Lille](#)
- **Starting date** : 2024-09-01
- **Duration of contract** : 1 year, 1 month
- **Deadline to apply** : 2024-09-30

## Contacts

- **Inria Team** : [SCOOL](#)
- **Recruiter** :  
Preux Philippe / [Philippe.Preux@inria.fr](mailto:Philippe.Preux@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.

## The keys to success

Passion for research.

Strong working abilities.

Strong interest in the collaboration between theory of machine learning and its practical application.

Ability to easily interact with the people involved in the project.

Be able to propose original and pointfull ideas, and defend them.

**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.

