Offer #2025-08784

Post-Doctorant F/H Privacy protection in geolocalization systems

Contract type : Fixed-term contract

Level of qualifications required : PhD or equivalent

Fonction : Post-Doctoral Research Visit

About the research centre or Inria department

The Inria Grenoble research center groups together almost 600 people in 23 research teams and 7 research support departments.

Staff is present on three campuses in Grenoble, in close collaboration with other research and higher education institutions (University Grenoble Alpes, CNRS, CEA, INRAE, …), but also with key economic players in the area.

Inria Grenoble is active in the fields of high-performance computing, verification and embedded systems, modeling of the environment at multiple levels, and data science and artificial intelligence. The center is a top-level scientific institute with an extensive network of international collaborations in Europe and the rest of the world.

Context

Description of the GTTP project : Geolocalization is essential to the efficient operation of many modern organizations. Reliable geolocalization can improve industrial processes, enhance human safety, reduce journeys, costs and losses, increase profitability and create new value-added services. Online services such as streaming, e-commerce but also the ICT infrastructure itself, wireless networks and edge computing, increasingly depend on geolocalization to provide their services. Due to the critical role of geolocalization in the ecosystem, performance

requirements are high and manifold. Different applications demand different properties from the service: tracking systems necessitate scalability, large coverage, very low cost and energy efficiency to support billions of objects of various sizes and values; real-time services need low latency to meet clients' stringent demands; user-centered services impose strict privacy requirements. Yet, existing geolocalization infrastructures fail to meet all requirements, if any, and are still unreliable, unsafe for personal data, limited in scope, not scalable and not interoperable because innovations in this domain have remained siloed over the years.

The objective of this project is to study and demonstrate why and how an open and unified geolocalization architecture would enable operators and their users to collaboratively contribute to the common global needs for location services of entities of any size and of any value. Since the location of an object is sensitive information and can constitute a major threat to privacy, GTTP will study more specifically how to natively secure this architecture. GTTP aims at (i) studying and designing an unified privacy-first geolocalization infrastructure, (ii) developing a demonstrator and evaluating it on various use cases, and (iii) analyzing in depth privacy aspects related to the geolocalization of humans and the tracking of objects in this framework. To do that, GTTP will provide the necessary scientific methodology and software artifacts and demonstrate their functionality, properties and performance on testbeds with real-life applications. By the means of two real-life use case types implemented with real position providers, the benefits of using the outcomes of GTTP before and after deploying the GTTP infrastructure will be showcased. Ideally, this project will serve as a pilot to larger international initiatives focused on its generalization and adoption.

This post-doc will focus on the privacy and security aspects of the project, and will be hosted by the Inria PRIVATICS team.

Assignment

Contribute to the ANR GTTP, especially on the privacy and security aspects.

Tasks

- Contribute to a privacy-oriented risk analysis of targeted use cases
- Design and implementation of privacy-preserving mechanisms and protocols
- Evaluation of privacy-preserving mechanisms and protocols
- Production of reports and research papers

Skills

- Interest in privacy and securityKnowledge in privacy protection schemes, secure protocols and cryptographic primitives
- Knowledge in networking and distributed systems
- Good software development skills (Python, ...)
- Good level of spoken and written english

Other valued skills : knowledge of geolocation / positioning systems

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 (90 days / year) 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
- Complementary health insurance under conditions

Remuneration

2788€ gross salary / month

General Information

- **Theme/Domain :** Security and Confidentiality
- **Town/city :** Lyon
- **Inria Center :** Centre Inria de Lyon
- **Starting date :** 2025-06-01
- **Duration of contract :** 2 years
- **Deadline to apply :** 2025-04-30

Contacts

- **Inria Team :** PRIVATICS

- **Recruiter :**
  Cunche Mathieu / mathieu.cunche@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

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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.