Offer #2025-09221

Senior Postdoc - Quantum cryptography

Contract type : Fixed-term contract

Level of qualifications required : PhD or equivalent

Fonction : Tempary Research Position

About the research centre or Inria department

The Inria research centre in Lyon is the 9th Inria research centre, formally created in January 2022. It brings together approximately 300 people in 19 research teams and research support services.

Its staff are distributed at this stage on 2 campuses: in Villeurbanne La Doua (Centre / INSA Lyon / UCBL) on the one hand, and Lyon Gerland (ENS de Lyon) on the other.

The Lyon centre is active in the fields of software, distributed and high-performance computing, embedded systems, quantum computing and privacy in the digital world, but also in digital health and computational biology.

Context

The position is for a senior postdoc (“starting research position”) in the QINFO team, which is bi-localised in Lyon and Grenoble. This position will be based in Grenoble and the candidate will collaborate with Alastair Abbott (Grenoble), Omar Fawzi (Lyon), as well as other members of the team across both sites.

The position comes with sufficient funding to travel and participate in conferences.

The position is in the context of the European Quantum Secure Networks Partnership (QSNP) and the French national initiative on device-independent QKD.

Assignment

The candidate will conduct research in quantum cryptography, notably in the development of methods and tools to analyse quantum cryptographic protocols, and the investigation of device-independent and semi-device-independent tools and protocols for quantum cryptographic tasks.

The candidate is expected to have sufficient experience to develop their own original research in these directions, as well as collaborating with other members of the team and help with the supervision of masters and PhD students in the team.

Main activities

The candidate will conduct research on topics such as:

- The development of entropy accumulation methods for the analysis of device independent protocols in quantum cryptography
- Improving finite size bounds on key rates in QKD protocols
- Development and improvement of QKD protocols with improved finite-size regime performance

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 (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

Remuneration

3085 € gross salary / month

General Information

- **Theme/Domain :** Algorithmics, Computer Algebra and Cryptology
- **Town/city :** Grenoble
- **Inria Center :** Centre Inria de Lyon
- **Starting date :** 2026-01-01
- **Duration of contract :** 12 months
- **Deadline to apply :** 2025-08-25

Contacts

- **Inria Team :** QINFO
- **Recruiter :**
  Abbott Alastair / alastair.abbott@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

- Solid background in quantum information and associated mathematical methods
- Motivation and hard work
- Willingness to collaborate with experimental physicists

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

Applications must be submitted online via the Inria website. Processing of applications submitted via other channels is not guaranteed.

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.