
Contract type : Fixed-term contract
Level of qualifications required : PhD or equivalent
Fonction : Post-Doctoral Research Visit

Context
We focus on developing advanced theoretical tools that can help understand the capabilities of quantum computers, improve their design for specific algorithms, and unlock new functionalities using quantum information processing. By taking this integrated approach, we hope to advance the state-of-the-art in Quantum Information Processing and provide valuable insights for future developments.

Assignment
The QAT Team at INRIA is seeking a highly motivated and talented individual to join our research team as a Postdoctoral Researcher. This position offers an exciting opportunity to contribute to cutting-edge research in the field of quantum computing. The successful candidate will be involved in exploring alternative quantum computing models and codesigning algorithms for these architectures.

Main activities
- Conduct research on alternative quantum computing models, exploring their potential advantages and limitations. We are especially interested in qudits and continuous variable information processing as well as MBQC and biased noise qubits.
- Codesign algorithms tailored for these alternative architectures, focusing on optimization and efficiency.
- Collaborate with other researchers and contribute to ongoing projects in the field of quantum computing.
- Publish research findings in top-tier conferences and journals.
- Present research results at international conferences and workshops.
- Contribute to the development of open-source quantum computing software and libraries.

Skills
- A Ph.D. in computer science, physics, or a related field with a focus on quantum computing.
- Strong background in quantum computing, including knowledge of quantum algorithms and quantum circuit modeling.
- Familiarity with alternative quantum computing models.
- Proficiency in programming languages commonly used in quantum computing, such as Python, Qiskit, or Cirq.
- Experience with codesigning algorithms for specific quantum architectures would be an advantage.
- Strong analytical and problem-solving skills.
- Excellent communication skills and ability to work collaboratively in a research team.
- Track record of scientific publications in relevant conferences and journals.

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.)
- Teleworking
- Flexible organization of working hours (after 12 months of employment)
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities

General Information
- Theme/Domain : Scientific computing (BAP E)
- Town/city : Paris
- Inria Center : Centre Inria de Paris
- Starting date : 2023-10-01
- Duration of contract : 2 years
- Deadline to apply : 2023-07-31

Contacts
- Inria Team : CASCADE
- Recruiter : Olivier Harold / harold.ollivier@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.
- Access to vocational training
- Social security coverage

**Recruitment Policy:**
As part of its diversity policy, all INRIA positions are accessible to people with disabilities.