https://ictqt.ug.edu.pl/job/postdoctoral-researcher-in-experimentally-oriented-device-independent-cryptography-2-2/

Senior Postdoc in Experimentally-Oriented Device Independent Cryptography

Results
competition results

Description
Senior Postdoc in Experimentally-Oriented Device Independent Cryptography is implemented as part of the QuantERA/2/2020 programme, *Experimentally-oriented Device Independent Cryptography* financed by the National Research and Development Center

About the project

Current state-of-the art quantum-assisted cryptography provides safety beyond what can be achieved with current classical technologies. Yet still, its safety is at question when we consider possibilities of quantum hacking or malicious producers of necessary quantum resources. This project aims at overcoming these main limitations by radically shifting current paradigms—by using device independent cryptographic (DIC) architecture. This is on one hand more demanding on experimental resources and theoretical understanding but on the other hand provides qualitative improvement in safety. DIC devices would then be not only safe against exploiting deviations of a real life from theoretical model but they would also have possibility of verification whether using such a device is secure.

The broad aim of the Quantum Cybersecurity and Communication group would be to perform research concerning quantum phenomena which could be used for quantum methods for information transfer, coding and processing, aimed towards applied physics and possible commercialization.

The goals of the group are:

- Development of self-testing protocols
- Security analysis of information processing protocols
- Research towards increasing efficiency and reliability of quantum protocols
- Studies of general rules for information processing
- Studies on quantum hacking and cryptanalysis to identify possible attacks and ways of preventing them
- Investigations of the role of information processing protocols as a tool to analyze the fundamental laws of Nature
- Finding experimental, applied physics, and industrial partners and collaborating with them towards building commercial quantum devices, prototypes, or obtaining patents.

Responsibilities

- Active scientific research.
- Presentation and discussion of ideas and results with a diverse audience at the ICTQT and at the external events.
- Participation in mentoring of PhD and MSc students.

Hiring organization
International Centre for Theory of Quantum Technologies

Beginning of employment
April 1st, 2022

Duration of employment
18 months

Industry
quantum physics

Job Location
Wita Stwosza 63, 80-308, Gdańsk, Poland

Base Salary
PLN 14000 - PLN 16100

Date posted
2023-07-24

Valid through
17.01.2022

- Participation in activities organized by the ICTQT.
- Active participation in seminars, group meetings, etc.

Qualifications

- PhD degree in physics, mathematics or computer science.
- Interest in quantum information and communication.
- Some experience in collaboration with experimental groups is welcome.
- Written and oral communication skills.
- Ability to work effectively with people from diverse cultural backgrounds.

Job Benefits

- Full-time employment in a rapidly developing unit, the International Centre for Theory of Quantum Technologies at the University of Gdansk. The start date of employment is negotiable.
- Scientific and organizational support.
- Basic equipment and core facilities.
- Friendly, inspiring, interdisciplinary environment.

Required documents

1. Curriculum vitae;
2. A research resume with a list of publications, and a list of research projects (esp. those in which the candidate was the principal investigator); PDF files of three most important papers by the candidate (or just web links, in the case of open access publications); a list of invited talks at conferences and workshops, and a list of academic prizes and awards;
3. Motivation letter (including statement of current scientific interests)– up to 2 pages;
4. Documents confirming scientific degrees (copy of PhD diploma, or equivalent);
5. Name and contact details (e-mail addresses) to two senior researchers who may provide reference for the candidate (**the candidate is expected to contact the referees and ask them to send reference letters directly to marcin.pawlowski@ug.edu.pl. The letters must be sent before the deadline.**). ICTQT may also contact the referees directly, to request the letters, or to send reminders.
6. Signed GDPR consent [PDF]

Recruitment process

1. An interview is expected.
2. ICTQT Selecting Commission (SC) reserves the right to invite for the interview only pre-selected candidates.
3. SC's decision is final and is not subject to appeal.
4. SC reserves the right to close the competition without selecting a candidate.
5. The decision will be made by SC within 3 months from the date of recruitment completion.
6. In the event of resignation from accepting the position of the selected candidate, the SC has the right to reconsider the applications submitted to the competition and to indicate a new candidate.

Contacts

Please submit the documents via email to **marcin.pawlowski@ug.edu.pl**

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