

JOB OFFER

PhD Student position in OPUS 25 project financed by the National Science Centre – 2 positions

Project title: ' Design of friendly for environment processing of quantum resources and cost of security of quantum communication networks' (referred to below as DIFFQRN)

Project leader: Dr hab. Karol Horodecki

Institution: Institute of Informatics, Division of Quantum Information, University of Gdansk – Gdańsk

Application deadline: 15.09.2024, 00:00

Requirements:

1. MSc degree in physics, mathematics or computer science.
2. Interest in quantum information theory.
3. Basic knowledge of quantum information processing and programming skills appreciated.
4. High motivation to conduct scientific research.

Required documents:

All required documents should be prepared in English and sent to: karol.horodecki[at]ug.edu.pl
subject: OPUS Phd Student

1. Cover letter (including details about research interests);
2. Curriculum vitae;
3. Contact details of a previous supervisor or another scientist who can provide a reference for the candidate;
4. Documents confirming scientific degrees (copy of diploma);

Description of the tasks:

The aim of the project is twofold. So far, quantum information processing (QIP) has been designed to achieve the task at a reasonable cost. A new idea is formulated under the Quantum Energy Initiative umbrella, which aims at environment-friendly quantum information processing (EFQIP). The first of the main purposes of the project DIFFQRN from National Science Centre is to compare different quantum ways to achieve some (quantum or classical) information processing tasks and provide the least harm to the environment way. Specifically, it aims to contribute to a paradigm shift from QIP to EFQIP, focusing on processing quantum resources. Quantum computing and the design of quantum networks are also part of this project's scope.

The second main part of the project concerns establishing fully functioning Quantum Internet. This task is challenging since one encounters inherent difficulties when designing entanglement networks due to decoherence and the quantum no-cloning principle. The project DIFFQRN from the National Science Centre aims to compare the optimality of the various proposed solutions to this problem, estimate their cost, and design more optimal solutions if needed. Since the generation of the secure key is one of the main applications in the future of the Internet, the special focus will be on expressing the cost in terms of the invested secure key. The broad vision of a part of this project is to develop quantum Internet in an optimal, least costly way.

The candidate as the member of the project will conduct scientific research related to the above topics, contribute to writing publications, and present obtained results at conferences and seminars.

Recruitment process:

General rules of the recruitment process:

1. The recruitment procedure has three stages:

o Pre-selection candidates by the Selection Commission (SC), based on sent documents;

o Interview of pre-selected candidates by SC;

o Recruitment to the UG Doctoral School of Natural Sciences (a formal UG procedure) for the candidates who are not PhD students yet.

2. PhD student positions are offered to candidates who have received a MSc degree (or equivalent) or who are already PhD students at other Universities/Institutions.

3. The decision will be made by the SC within 2 months from the date of recruitment completion.

4. SC reserves the right to invite for the interview only pre-selected candidates.

5. SC's decision is final and is not subject to appeal.

6. In the event of resignation from accepting the position of the selected candidate, the SC has the right to send the offer to the person placed on the reserve list, and in the absence of such a list, the SC has the right to reconsider the applications submitted to the competition and to indicate a new candidate.

8. SC reserves the right to close the competition without selecting the candidate.

Job benefits:

1. Monthly stipend : 5000 PLN

- Starting date: 15.10.2024 (negotiable)

- Maximum period of contract/stipend agreement: 48 months

3. Scientific and organizational support;

4. Basic equipment and core facilities;

5. Friendly, inspiring, interdisciplinary environment of the Institute of Informatics, International Centre for Theory of Quantum Technologies and the Institute for Theoretical Physics and Astrophysics (IFTiA) at UG.

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Name and surname

I hereby give consent for the University of Gdansk to process my personal data as contained in application documents for the purposes of the competition process for the position of a PhD student offered by the Institute of Theoretical Physics and Astrophysics of the University of Gdansk in accordance with the general regulation of 27 April 2016 on the protection of personal data.

Moreover, I declare that I have been informed as to the option of withdrawing my consent at any moment and that withdrawal shall not interfere with the legality of the processing conducted on the basis of my consent prior to the withdrawal.

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date and signature

In accordance with the general regulation of 27 April 2016 on the protection of personal data, hereinafter referred to as GDPR, we wish to inform you that:

1. The Administrator of your personal data is the University of Gdansk, with its seat at (80-309) Gdansk, ul. Jana Banking 8.
2. The Administrator has appointed a Data Protection Officer who may be contacted on the following telephone number: +48 58 523 31 30, +48 58 523 24 59 or e-mail address: iod@ug.edu.pl.
3. Your personal data shall be processed for the purposes of the recruitment process for the position of a PhD student offered by the International Centre for Theory of Quantum Technologies of the University of Gdansk.
4. The legal basis for processing your personal data for the purposes of recruitment shall be Article 6 Section 1 Point c of the GDPR, with processing being necessary for the fulfilment of a legal obligation to which the Administrator is subject, particularly Article 118a of the Law on Higher Education as well as Article 221 of the Labour Code. The condition legalising the processing of personal data provided voluntarily by the candidate, which is beyond the scope of data referred to in Article 221 of the Labour Code, shall be Article 6 Section 1 Point a of the GDPR – consent by the data subject.
5. Providing your personal data, subsequent to the decision to enter the recruitment process, is obligatory within the scope defined by Article 221 of the Labour Code and the Law on Higher Education and determines the possibility of applying for work as well as possible further employment. In the case of personal data which is beyond the scope of the aforementioned legal regulations, providing your data is voluntary but it does determine the possibility of participating in the recruitment process.
6. Your personal data shall be processed on behalf of the data administrator by authorised personnel purely for the purposes referred to in Point 3.
7. Your personal data shall be stored for a period of time necessary for the fulfilment of the aims referred to in Point 3. Should the recruitment outcome prove negative, your data shall be removed immediately at the completion of recruitment, unless otherwise provided by the record-keeping regulations – then for a period of time specified in these regulations.
8. Your personal data shall not be shared with external entities with the exception of cases provided for by legal regulations. Should you submit your application documents in electronic form, the recipient of your data may be an entity acting on behalf of the administrator i.e. a mail service operator.
9. Under the terms of the GDPR, you shall be entitled to:
 - a. the right to access your data,
 - b. the right to rectify it if factually incorrect,
 - c. the right to remove or restrict the processing of the data as well as the right to data portability – in cases prescribed by the law,
 - d. the right to object to the processing of the data,
 - e. the right to file a complaint with the supervisory authority – the President of the Personal Data Protection Office, should you consider that the processing of your personal data violates personal data protection regulations.

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date and signature