

# PhD position on simulation of large repeater networks

Wed, 2018-11-28 10:41 - [David Elkouss](#) [1] **At:** QuTech, TU Delft

**Deadline:** 31 December, 2018

## Location

Delft Delft Netherlands  
See map: [Google Maps](#) [2]

## What

The [Quantum Internet Alliance](#) [3] (QIA) is a consortium funded by the Quantum Flagship Programme. The consortium consists of twelve universities from eight European countries, in close cooperation with over twenty companies and institutes. The aim of QIA is to develop a blueprint for a future quantum internet. In particular, QIA will establish the first multi-node quantum processor networks, lay the groundwork for quantum repeaters to allow quantum bits to travel long distances, and develop the first software and network stack for allowing scalable control and software development over a Quantum Internet useful.

Your goal within QIA will be to optimize **via simulation** 1) network layouts, e.g. where to position repeater stations, and 2) protocols to enable long-distance quantum communication. This is a highly non-trivial task due to the quantum nature of the network and the probabilistic processes involved in entanglement distribution. To achieve this goal you will use our quantum network simulator NetSquid and have access to the Dutch supercomputing facilities from [SURFsara](#) [4].

## Where

You will join the research groups of [David Elkouss](#) [5] and [Stephanie Wehner](#) [6] in [QuTech](#) [7], a research institute in Delft, the Netherlands. Additionally, you will also work in close collaboration with the rest of the members of QIA.

## Who

You have a master's degree in either computer science, electrical engineering, mathematics or physics. You have demonstrated your abilities in at least one research project. A background in quantum information and/or software engineering are a plus.

If you don't have yet a master's degree, we encourage you to apply to our [new scholarship for master's students](#) [8]. (Deadline December 1st)

## How

To apply fill the application [here](#) [9].

For questions about the application, you can write an email to: d dot elkousscoronas at tudelft dot nl

The gross monthly salary for a Ph.D. candidate is €2,222 during the first year and increases to €2,840 over the four years period. Employees are also entitled to a holiday allowance of 8% of the gross annual salary and a year-end bonus of 8.33%. These values are subject to update. The salary and the terms of employment are in accordance with the [Dutch Collective Labor Agreement for Research Centers](#) [10] ("CAO-onderzoeksinstituten").

## When

The application deadline is **December the 31st 2018**. The starting date is March the 1st 2019 (can

be negotiated).

- [PhD](#) [11]

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**Links:**

[1] <http://qurope.eu/users/davidelkouss>

[2] <http://maps.google.nl?q=%2C+Delft%2C+%2C+nl>

[3] <http://quantum-internet.team/>

[4] <https://www.surf.nl/en/services-and-products/dutch-national-supercomputer/index.html>

[5] <https://qutech.nl/person/david-elkouss/>

[6] <https://qutech.nl/stephanie-wehner-group/>

[7] <https://qutech.nl/>

[8] <https://qutech.nl/academy/join/scholarships/qutech-scholarships/>

[9] <https://sites.google.com/view/phdqnsim>

[10] <https://www.nwo.nl/en/funding/funding+process+explained/salary+tables>

[11] <http://qurope.eu/db/jobs/type/phd>