



# Jérémy Ribeiro



5 July 1992



The Netherlands



jrmy-rbr.github.io



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## About me

I am a doctor in quantum information theory recently reconverted into data science. I am searching for a position that will allow me to deepen my data science and machine learning skills, while helping my coworkers solving meaningful problems. My top skills are mathematical thinking and collaborative work. Ultimately my goal is to become an expert data scientist and shed light on the most important problems of our societies.

## Skills

pandas, numpy, scipy, machine learning

Software: Latex, Atom, LibreOffice

Linear Algebra|Probability|Cryptography

Graphics: GIMP, Inkscape, Tikz

(\*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

## Work Experience

2015-2020 PhD, Quantum information theory,  
*Stephanie Wehner's group, QuTech, Delft University of Technology, Delft, The Netherlands:*

- Part of the development of the "Quantum Protocol Zoo" platform in the framework of the "Quantum Internet Alliance". (see [https://wiki.veriqcloud.fr/index.php?title=Main\\_Page](https://wiki.veriqcloud.fr/index.php?title=Main_Page))
- "Head Teaching Assistant (TA)" for a MOOC on quantum cryptography (on edx.org) in 2018: I was entirely in charge of a team of 4 TAs and of the management of the platform.
- Teaching Assistant for the MOOC on quantum cryptography for the years 2016 and 2017.
- Teaching Assistant for the course on quantum communication in TU Delft in 2019.
- Supervision of two Bachelor students.
- "Organization assistant" for the Conference QIP-2018 conference held in Delft.

## Certifications & Online Courses

2020	Machine Learning by Andrew Ng <i>Coursera, Stanford online</i>
2019	Using python for research <i>edX platform, HarvardX</i>
2019	Statistics and R <i>edX platform, HarvardX</i>
2019	Leadership, teamwork and group dynamics <i>TU Delft</i>
2019	The Art of Presenting Science <i>TU Delft</i>
2019	Popular Scientific Writing <i>TU Delft</i>
2019	Coaching Individual Students and Project Group <i>TU Delft</i>
2019	Conversation Skills <i>TU Delft</i>

## Education

2015-2020	PhD, Quantum information theory, <i>Stephanie Wehner's group, QuTech, Delft University of Technology, Delft, The Netherlands.</i> <ul style="list-style-type: none"> <li>• Propose and analyze quantum cryptographic protocols and give security proofs.</li> </ul>
2015	Master in Condensed Matter Physics <i>Université Paris-Sud, Orsay, France</i> <ul style="list-style-type: none"> <li>• Project in quantum cryptography: "A Tight Lower Bound for the BB84-states Quantum-Position-Verification Protocol" (see: <a href="https://arxiv.org/pdf/1504.07171.pdf">https://arxiv.org/pdf/1504.07171.pdf</a>).</li> </ul>
2013	Bachelor Fundamental Physics <i>Université Paris-Sud, Orsay, France</i>
2010-2012	"Classe Préparatoire aux Grandes Écoles" <i>Lycée du Parc, Lyon, France</i>

# Languages

Français

English

Español

Portugues

Italiano

Nederlands

(\*)[The skill scale is from 0 (can't speak it) to 6 (Fluent).]

# Hobbies

Tango

Cinema

Effective Altruism

## Scholastic Achievements

Present

Author/coauthor of eleven papers:

- 9 are already published.
- One is being submitted to a journal

An up-to-date list of my publications can be found on Google Scholar:  
<https://scholar.google.com/citations?user=y1ZcBOYAAAAJ>

2013

Scholarship for the two years of master based on my Licence grades (10% of eligible students).

2012

I passed a highly selective entrance examination for the "Grandes Écoles".

## Research: A short selection of papers

### Journal

PRA

Fully device-independent conference key agreement:

We propose a protocol that allows to distribute a cryptographic secret key that is secure against an "all powerful adversary". This security is achieved even if the quantum devices used by the parties during the protocol deviate completely from their expected behavior, in fact the quantum devices could even be created and programmed by the adversary, *i.e.* the devices can be malicious.

PRA

Device independence for two-party cryptography and position verification with memoryless devices:

We propose a protocol for a very important building block of many cryptographic protocols. The security of this protocol holds against an adversary that has limited quantum storage abilities. This assumption is necessary since without it no such protocol can be secure for this building block. Moreover our security proof holds even if the quantum devices used by the honest parties are malicious. *However* in this work we have assumed that these devices are memoryless: They do not change behavior through time.

## Communication skills

Oral skills

Two scientific conference talks at YQIS-2016 and YQIS-2017.  
Presented many posters in different scientific conferences.

Written skills Author of eleven papers.

Pop-science

Popular science articles on Qutech blog about different topics of quantum information:

- Here I explain what is quantum superposition,  
<http://blog.qutech.nl/index.php/2018/10/11/dead-or-alive-can-you-be-both/>
- Here I explain why one cannot use quantum entanglement alone for communication,  
<http://blog.qutech.nl/index.php/2016/11/15/can-you-tell-your-grandma-the-weather-using-only-entanglement/>
- Here I explain what is quantum teleportation,  
<https://blog.qutech.nl/index.php/2016/08/18/quantum-teleportation-explained/>