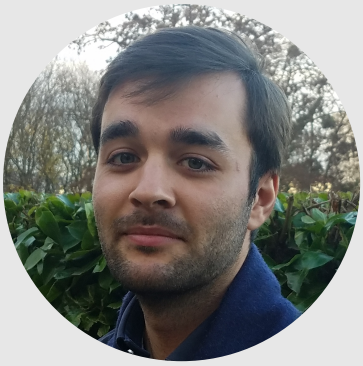

Jérémy Ribeiro

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About me

Driven by curiosity and the will of understanding the world down to very fundamental questions, I have developed during my studies a wide skill set of mathematical tools. In particular, during my PhD in quantum information theory and quantum cryptography, I have worked at the interface between quantum physics, theoretical computer science and mathematics. Therefore, I have used tools that are of fundamental importance in a wide range of other disciplines, like cryptography, machine learning or data science.
I want to become an expert data scientist and shed light on the most important problems of our societies.

Skills

pandas, numpy, scipy

Software: Latex, Atom, LibreOffice

Linear Algebra|Probability|Cryptography

Graphics: GIMP, Inkskape, Tikz

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

Work Experience

2015-2020 PhD, Quatum 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.veriqloud.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.

Education

2015-2020 PhD, Quatum information theory,
Stephanie Wehner's group, QuTech, Delft University of Technology, Delft, The Netherlands.

- Propose and analyze quantum cryptographic protocols and give security proofs.

2015 Master in Condensed Matter Physics
Université Paris-Sud, Orsay, France

- Project in quantum cryptography: "A Tight Lower Bound for the BB84-states Quantum-Position-Verification Protocol" (see: `https://arxiv.org/pdf/1504.07171.pdf`).

2013 Bachelor Fundamental Physics
Université Paris-Sud, Orsay, France

2010-2012 "Classe Preparatoire aux Grandes Écoles"
Lycée du Parc, Lyon, France

Certifications & Online Courses

2019 Using python for research
edX platform

2019 Statistics and R
edX platform

Scholastic Achievements

Present Author/coauthor of eleven papers:

- Six are already published.
- Three are 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".

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

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-entangleme`
- Here I explain what is quantum teleportation, `https://blog.qutech.nl/index.php/2016/08/18/quantum-teleportation-explained/`