

Luís Bugalho

Curriculum Vitae

Lisboa, Portugal
✉ luis.bugalho@tecnico.ulisboa.pt
📄 github.com/luisbugalho



Education

- September 2022–Current **PhD in Physics**, *Instituto Superior Técnico*, Lisboa, Portugal & *Sorbonne Université*, Paris, France.
Project under a FCT Scholarship, divided between the two hosting institutions Center of Physics and Engineering of Advanced Materials (CeFEMA) in Lisboa and LIP6 in Paris
Under the supervision of Yasser Omar and Damian Markham
- 2018–2021 **Masters in Engineering Physics**, *Instituto Superior Técnico*, Lisboa, Portugal, MEFT.
Master Thesis - "Distributing Multipartite Entanglement over Quantum Networks"
Under the supervision of Yasser Omar
Final grade - 18/20
- 2015–2018 **Bachelor in Engineering Physics**, *Instituto Superior Técnico*, Lisboa, Portugal, MEFT.
Final grade - 17/20
- 2012–2015 **Highschool Degree in Sciences and Technologies**, *Escola Secundária de Professor José Augusto Lucas*, Oeiras, Portugal.
Final Grade - 19/20

Experience

- January 2021–September 2021 **Graduate Research Assistant**, *Physics of Information and Quantum Technologies Group*, Instituto de Telecomunicações, Lisboa, Portugal.
Short-term position between my masters and the beginning of my PhD. Mostly worked on quantum networks and protocols for entanglement distribution.

Publications and Pre-Prints

- Journal Paper **Resource-efficient simulation of noisy quantum circuits and application to network-enabled QRAM optimization**, Bugalho, L., Zambrini Cruzeiro, E., Chen, K. C., Dai, W., Englund, D. & Omar, Y., npj Quantum Inf 9, 1–13 (2023), <https://doi.org/10.1038/s41534-023-00773-x>.
- Pre-Print **Entanglement Routing Based on Fidelity Curves for Quantum Photonics Channels**, Coutinho, B. C., Monteiro, R., Bugalho, L. & Monteiro, F. A., Pre-print in arXiv (2023), <https://doi.org/10.48550/arXiv.2303.12864>.
- Journal Paper **Distributing Multipartite Entanglement over Noisy Quantum Networks**, Bugalho, L., Coutinho, B. C., Monteiro, F. A. & Omar, Y., Quantum 7, 920 (2023), <https://doi.org/10.22331/q-2023-02-09-920>.

Workshop Paper **Cold Atoms in Space: Community Workshop Summary and Proposed Road-Map**, *Alonso, I. et al.*, EPJ Quantum Technol. 9, 30 (2022), <https://doi.org/10.1140/epjqt/s40507-022-00147-w>.

All publications are also available at [this link](#).

Talks and Posters

- March 2024 **Workshop Talk**, *Quantum Sensor Networks*, Quantum Sensing and Metrology Workshop @ ANACOM, Lisboa, Portugal.
- March 2023 **Seminar Talk**, *Distributing Multipartite Entanglement over Noisy Quantum Networks*, UMass/CQN Quantum Network Science Seminar, *online* for University of Massachusetts Amherst.
- March 2023 **Workshop Talk**, *Quantum Sensor Networks*, PT-UK Workshop on Quantum Technologies in Space, Lisboa, Portugal.
- July 2023 **Conference Poster**, *Resource-efficient simulation of noisy quantum circuits and application to network-enabled QRAM optimization*, Theory of Quantum Computation, Communication and Cryptography (TQC), Aveiro, Portugal.
- July 2022 **Conference Poster**, *Distributing Multipartite Entanglement over Noisy Quantum Networks*, International Conference on Quantum Communication, Measurement and Computing (QCMC), Lisboa, Portugal.
- February 2022 **Conference Talk**, *Distributing Multipartite Entanglement over Noisy Quantum Networks*, International School and Conference on Network Science (NetSciX), Porto, Portugal.
- December 2021 **Conference Poster**, *Distributing Multipartite Entanglement over Noisy Quantum Networks*, *online* at European Quantum Technologies Conference (EQTC).
- April 2021 **Workshop Poster**, *Distributing Multipartite Entanglement over Noisy Quantum Networks*, *online* at Bristol Quantum Information Technologies Workshop (BQIT).
- April 2021 **Workshop talk**, *Distributing Multipartite Entanglement over Noisy Quantum Networks*, *online* at a Quantum Internet Alliance (QIA) Meeting.
- April 2021 **Seminar talk**, *Distributing Multipartite Entanglement over Noisy Quantum Networks*, *online* for QI Team at LIP6, Sorbonne Université.

Conferences and other Academic Activities

- June 2023 **Attendee**, *Quantum Internet Alliance (QIA) Spring meeting*, Paris, France.
- March 2023 **Attendee**, *Terrestrial Very-Long-Baseline Atom Interferometry Workshop*, *online* from CERN.
- April 2022 **Attendee**, *QNetworks 2022 International Workshop*, *online*.
- Summer 2018 **Summer Internship**, *Intrumentation and Experimental Particle Physics Laboratory - LIP*, Lisboa, Portugal.
- March 2018 **JEF V**, *Jornadas de Engenharia Física V*, Instituto Superior Técnico, Lisboa, Portugal.
Organizer of the 5th edition of JEF organised by NFIST for students to engage in exploring physics inside and outside of academia. Responsible for outreach, funding and communication.

February 2018 **Mini-School on Particle Physics, Instrumentation and Experimental Particle Physics Laboratory - LIP**, Lisboa, Portugal.

Computer skills

Advanced PYTHON, C, C++, MATHEMATICA, \LaTeX , Adobe Illustrator
Intermediate Microsoft Office, Microsoft Windows, Linux, MacOS, Adobe Premiere, Final Cut Pro
Basic HTML, MATLAB

Languages

Portuguese **Native speaker**
English **Fluent**
French **Intermediate** *Fluent writing and reading. Basic conversations.*
Spanish **Basic** *Basic words and phrases only.*

Extra Curricular and Others

- 2022 **Quandela Hackathon**, Sorbonne Université, Paris, France.
Replicating the results of a paper that used a photonic implementation of a quantum enhanced reinforcement learning model. 3rd prize winners.
- 2019 **IBM Quantum Hackathon**, IBM online.
Circuit optimization to solve a coloring problem. 6th place out of 40
- 2018 **MOOC, Optimal Stopping Problems**, Instituto Superior Técnico, Lisboa, Portugal.
Online course for one semester about optimal stopping problems, using stochastic calculus in financial mathematics problems.
- 2008-2022 **Scout, 2º Grupo AEP - Associação dos Escoteiros de Portugal**, Lisboa, Portugal.
- Chief of Division from 2015 to 2019: Leading, cooperation and communication skills
- Responsible for several community activities including "Arraial do Segundo" 2016 and 2018 editions
- Collaborator from 2019-2022
- 2016 **Conference on Education**, Faculty of Psychology, University of Lisbon, Lisboa, Portugal.
Participant and speaker in a conference about the future of education in Portugal, from a scout point of view.