

# Luis Villegas-Aguilar

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## Personal information

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GitHub [luyves](https://github.com/luyves)

## Trajectory

2025–now **Center for Macroscopic Quantum States**, Copenhagen, Denmark  
Postdoctoral fellow

2021–2025 **Quantum Optics and Information Lab**, Brisbane, Australia  
Doctoral researcher

2019–2020 **HSBC**, Mexico City, Mexico  
Data scientist

2016–2019 **Quantum Optics Lab, IF**, Mexico City, Mexico  
Research associate

## Education

2021–2025 **Griffith University**, Brisbane, Australia  
Ph.D in Physics  
Thesis title: “Quantum networking with ultrahigh-performance entangled photon sources” under Nora Tischler, Sergei Slussarenko, and Geoff J. Pryde  
Excellence in Research Thesis Award

2013–2019 **UNAM**, Mexico City, Mexico  
B.Sc. (Hons) in Physics, GPA 9.86 out of 10  
Thesis: “Data acquisition system for photon pairs with atomic origin” under Daniel Sahagún-Sánchez

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## Research

- Journal articles
- 2025 [Villegas-Aguilar, Luis](#), Wang, Y., Pepper, A., Baker, T.J., Pryde, G.J., Slussarenko, S., Tischler, N., and Wiseman, H.M. **Quantum assemblage tomography**. Preprint at Phys. Rev. A 112 (3) L030402
- 2025 White, S.J., Polino, E., Ghafari, F., Joch, D.J., [Villegas-Aguilar, Luis](#), Shalm, L.K., Verma, V.B., Huber, M., and Tischler, N. **A robust approach for time-bin encoded photonic quantum information protocols**. Phys. Rev. Lett. 134 (2025) 180802.
- 2024 [Villegas-Aguilar, Luis](#), Polino, E., Ghafari, F., Quintino, M.T., Laverick, K.T., Berkman, I.R., Rogge, S., Shalm, L.K., Tischler, N., Cavalcanti, E.G. and Slussarenko, S., and Pryde, G. J. **Nonlocality activation in a photonic quantum network**. Nature Communications 15 (2024) p.3112  
Media release: Combating disruptive 'noise' in quantum communication
- 2022 Arias-Télez, N., Ángeles-Aguillón, I.F., Martínez-Cara, D., Martínez-Vallejo, A., [Villegas-Aguilar, Luis](#), Mendoza-López, L.A., Torres, Y.M., Gutiérrez-Arenas, R.A., Jáuregui, R., Sahagún-Sánchez, D., Pérez Castillo, I., and Ceré, A. **An experimental setup to generate narrowband bi-photons via four-wave mixing in cold atoms**. Revista mexicana de física, 68 (2022) p.031303.
- Preprints
- [Villegas-Aguilar, Luis](#), Ghafari, F., Winnel, M.S., Shalm, L.K., Verma, V.B., Ralph, T.C., Pryde, G.J., and Slussarenko, S. **A heralded quantum amplifier of multi-photon states**. Preprint at arXiv:2505.13992.
- [Villegas-Aguilar, Luis](#), Polino, E., Poderini, D., Walk, N., Quintino, M.T., Ghafari, F., Chaves, R., Rogge, S., Pryde, G.J., Cavalcanti, E.G., Tischler, N., and Slussarenko, S. **Experimental quantum randomness enhanced by a quantum network**. Preprint at arXiv:2412.16973
- Books
- 2020 [Villegas-Aguilar, Luis](#) and Cara-Camarena, S. **Informática II**. ISBN: 978-6-07-627398-2. (High-school level textbook on computer technologies. In spanish.)

## Talks

- 2025 Quantum 2025 @ Turin, Italy
- 2024 26th Australian Institute of Physics Congress @ Melbourne, Australia
- 2024 KOALA Conference on Optics, Atoms, and Laser Applications @

- Melbourne, Australia
- 2024 28th Central European Workshop on Quantum Optics @ Olomouc, Czech Republic
- 2024 OPTICA Quantum 2.0 @ Rotterdam, Netherlands
- 2023 SPIE Photonics for Quantum @ Rochester, USA
- 2022 24th Australian Institute of Physics Congress @ Adelaide, Australia

## Teaching

- 2025-2026 Master student supervision @ DTU
- 2023-2024 Undergraduate student supervision @ Griffith University
- 2021 Teaching Assistant for first-year course on Linear Algebra @ Griffith University
- 2019 Teaching Assistant for fourth-year course on Atomic Physics and Condensed Matter @ UNAM
- 2018 Teaching Assistant for third-year course on Optics @ UNAM

## Scholarships, honours and awards

- 2026 Award of Excellence in a Doctoral Research Thesis
- 2025 Elected ambassador for Inspiring Australia Queensland
- 2020 Australian Research Council Postgraduate Research Full Scholarship
- 2019 University medal "Gabino Barreda" for outstanding academic achievement, presented to the graduating student with the highest overall grade in the Physics degree program
- 2018 UNAM/PAPIME scholarship for developing innovative teaching methods in Physics
- 2017 Merit scholarship by CNPEM/Ministry of Science, Technology, Innovation and Communication of Brazil to pursue a two-month research internship at the National Synchrotron Light Lab, Campinas, Brazil
- 2015 Merit scholarship by ANUIES/Department of State of the United States of America to pursue a two-month research internship at the University of Texas at Dallas, USA