
WORK EXPERIENCE

- 2025– Associate Dean for research-FES Acatlán. National Autonomous University of Mexico. Mexico
- 2025– CEO/Founder. Qaldas. Colombia/Mexico
- 2021–2025 Coordinator/Founder. QMexico. Mexico
- 2022–2025 Visiting Assistant Professor. Earlham College. USA
- 2022–2025 Instructor Online. Baylor University. USA
- 2020–2022 Research Scholar. Baylor University. USA
- 2020–2022 Instructor. Baylor University. USA
- 2017–2020 Instructor Online. National Autonomous University of Mexico. Mexico
- 2017–2020 Associate Professor. National Autonomous University of Mexico. Mexico
- 2015–2017 Postdoctoral Researcher. National Autonomous University of Mexico. Mexico
- 2015–2016 Research Assistant. National Autonomous University of Mexico. Mexico
- 2008–2014 General Coordinator. PMDSC. Mexico

EDUCATION

- 2025– Master of Science in Interdisciplinary (Computational) Engineering. Purdue University. USA
- 2014 Doctor of Sciences in Applied Physics. Autonomous University of Puebla. Mexico
- 2010 Master of Sciences in Applied Physics. Autonomous University of Puebla. Mexico
- 2008 Bachelor of Science in Physics. Pedagogical and Technological University of Colombia. Colombia

COURSES & CERTIFICATIONS

- 2023 The Foundations of Cybersecurity. Kennesaw State University. USA
- 2020 Machine Learning Regression. University of Washington. USA
- 2020 The Introduction to Quantum Computing. Saint Petersburg State University. Russia
- 2020 Machine Learning Foundations: A Case Study Approach. University of Washington. USA
- 2020 Machine Learning with Python. IBM. USA
- 2020 Python Data Structures. University of Michigan. USA
- 2020 Python y OpenCV to computer vision. Udemy. Online
- 2019 Basic Swift. UNAM. Mexico
- 2019 AWS Educate. UNAM. Mexico
- 2019 Quantum Computing: Qtraining for Bronze. QWorld. Latvia
- 2017 Modern cryptography teaching. UNAM. Mexico
- 2017 Techniques for teaching advanced database topics. UNAM. Mexico
- 2016 Statistics with Mathematica and Python. UNAM. Mexico
- 2015 Didactic Planning for the Distance Education. UNAM. Mexico
- 2015 Teaching with ICT. UNAM. Mexico
- 2015 Assessor on distance education. UNAM. Mexico
- 2015 Web 2.0 Resources for the Distance Education. UNAM. Mexico

INTERNATIONAL PARTICIPATION

- 2026 **Organizer.** Internationa Quantum Discovery Day. Mexico State. Mexico
- 2026 **Keynote Speaker.** Seminario de Investigación en Redes y Servicios de Cómputo. Veracruz. Mexico
- 2026 **Speaker.** Congreso Nacional de Física Cuántica del TecNM. Monterrey. Mexico
- 2025 **Reviewer.** LXAI at ICML. Vancouver. Canada
- 2025 **Chair.** International Conference on Emergent and Quantum Technologies. Las Vegas. USA

- 2025 **Attendee.** France Quantum. Paris. France
- 2025 **Attendee.** International Conference on Quantum Energy. Padua. Italy
- 2025 **Speaker.** Global Physics Summit. Anaheim. USA
- 2024 **Speaker.** Int'l Conference on Computational Science and Computation Intelligence. Las Vegas. USA
- 2024 **Speaker.** 50th Annual Mathematics Conference. Oxford. USA
- 2024 **Speaker.** LatinX in AI Research Workshop at ICML. Viena. Austria
- 2024 **Reviewer.** International Conference on Emergent and Quantum Technologies. Las Vegas. USA
- 2022 **Author.** LatinX in AI Research Workshop at ICML. Baltimore. USA
- 2022 **Attendee.** StoryMakers. Denver. USA
- 2022 **Attendee.** Faculty-Industry Relationships Workshop. Santa Clara. USA
- 2022 **Author.** The Southwest Data Science Conference 2022. Waco. USA
- 2021 **Speaker.** Int'l Conference on Computational Science and Computation Intelligence. Las Vegas. USA
- 2020 **Speaker.** XXXIV RADPyC. Mexico City. Mexico
- 2020 **Organizer.** LatinX in AI Research Workshop at ICML. Viena. Austria
- 2020 **Attendee.** ECT Talent School on ML and Data Analysis for Nuclear Physics. Trento. Italy
- 2019 **Finance Chair.** LXAI at ICML. Long Beach. USA
- 2018 **Attendee.** LatinX in AI Research Workshop at NeurIPS. Montreal. Canada
- 2018 **Attendee.** Machine Learning on High Energy Physics. Oxford. UK
- 2018 **Speaker.** Machine Learning in Geometry and Physics. Sanya. China
- 2018 **Speaker.** LatinX in AI Research Workshop at NeurIPS. Montreal. Canada
- 2018 **Attendee.** Machine learning in geometry and Physics. Sanya. China
- 2018 **Speaker.** XXXII RADPyC. Mexico City. Mexico
- 2017 **Speaker.** Education and TIC for Sciences Teaching. Mexico City. Mexico
- 2017 **Speaker.** II Mathematical Thinking. Mexico State. Mexico
- 2017 **Reviewer.** Expociencias. Mexico State. Mexico
- 2017 **Speaker.** XVI Semana Académica de Matemáticas aplicadas y computación. Mexico State. Mexico
- 2017 **Moderator.** XVI Semana Académica de Matemáticas aplicadas y computación. Mexico State. Mexico
- 2017 **Referee.** Integral Contest. Mexico State. Mexico
- 2017 **Speaker.** Instructional development. Mexico State. Mexico
- 2017 **Speaker.** Research Projects. Mexico State. Mexico
- 2017 **Participante.** Diagnostic exam. Mexico State. Mexico
- 2017 **Speaker.** XXXI RADPyC. Mexico City. Mexico
- 2017 **Speaker.** FESAc-UNAM. Mexico City. Mexico
- 2016 **Speaker.** Effective Field Theories as Discovery Tools. Mainz, GER. Germany
- 2016 **Speaker.** Latinamerican Symposium on High Energy Physics. Antigua. Guatemala
- 2016 **Speaker.** MSPF. Chiapas. Mexico
- 2016 **Speaker.** XI SILFAE. Antigua. Guatemala
- 2016 **Attendee.** REDFAE. Pachuca. Mexico
- 2016 **Attendee.** Mini-Workshop on Dark Matter. Mexico City. Mexico
- 2016 **Speaker.** Seminar. Mexico City. Mexico
- 2016 **Speaker.** Effective Field Theories as Discovery Tools. Mainz. Germany
- 2016 **Speaker.** Seminar. Siegen. Germany
- 2016 **Attendee.** Workshop. Mexico City. Mexico
- 2016 **Attendee.** 1th Workshop on Dark Matter. Puebla. Mexico
- 2016 **Speaker.** XXX RADPyC. Puebla. Mexico
- 2015 **Speaker.** XV Mexican Workshop on Particles and Fields. Mazatlan. Mexico
- 2015 **Speaker.** IV Congress on Technology for the education. San Luis Potosi. Mexico
- 2015 **Attendee.** HEP-Network Meeting. Guanajuato. Mexico
- 2014 **Attendee.** XXVIII RADPyC. Mexico City. Mexico
- 2014 **Speaker.** Conference of the High energy group. Mexico City. Mexico
- 2013 **Speaker.** XVI Mexican Workshop on Particles and Fields. Oaxaca. Mexico

- 2013 **Speaker.** XXVII RADPyC. Mexico City. Mexico
- 2013 **Speaker.** School on Particle Physics in the LHC era. Sao Paulo. Brazil
- 2012 **Speaker.** PASCOS. Merida. Mexico
- 2012 **Speaker.** XV Mexican Workshop on Particles and Fields. Puebla. Mexico
- 2012 **Speaker.** III National Science Meeting: Luis Rivera Terrazas. Puebla. Mexico
- 2011 **Speaker.** XXVI RADPyC. Mexico City. Mexico
- 2011 **Attendee.** DCPIHEP. Colima. Mexico

INTERNATIONAL ORGANIZING COMMITTEES

- 2025 **Co-Chair.** Int'l Conf. on Emergent and Quantum Technologies CSCE25 Las Vegas, USA
- 2023 **Co-Chair.** Int'l Conf. on Emergent and Quantum Technologies CSCE23 Las Vegas, USA
- 2022 **Public Relations Chair.** LatinX in AI at ICML Baltimore, USA
- 2022 **Co-Chair.** Int'l Conf. on Emergent and Quantum Technologies CSCE22 Las Vegas, USA
- 2022 **Co-Chair.** QWinter-QMexico Online, Mexico
- 2021 **Facilitator.** Washington Quantum Computing Meetup Online, USA
- 2020 **Mentor.** LatinX in AI at ICML Online, USA
- 2020 **Volunteer.** ICML Austria , Vienna
- 2020 **Coordinator.** QMexico Mexico City, Mexico
- 2019 **Finance Chair.** LatinX in AI at ICML Long Beach, USA
- 2018 **Leader.** Quantum and Scientific Computing Group FESAc-UNAM Naucalpan, Mexico
- 2017 **Coordinator.** STEM-Seminar FESAc-UNAM Naucalpan, Mexico
- 2017 **Local committee.** Scientific summer for High Energy Physics FESAc-UNAM Naucalpan, Mexico
- 2016 **Organizer.** III Flavor Physics Symposium FESC-UNAM Cuautitlan, Mexico
- 2016 **Organizer.** Workshop on Theoretical and Computational Physics FESC-UNAM Cuautitlan, Mexico

PROFESSIONAL RECOGNITIONS AND AWARDS

- 2024 APS-Simons Travel & Professional Development Awards. USA.
- 2020 QMexico coordinator. QWorld.
- 2019 Proyecta Scholarship. Mexico-Canada.
- 2015 SNI 1 (Mexican office for Science). Mexico.
- 2015 UNAM Scholarship. Mexico.
- 2010 Conacyt Scholarship. Mexico.
- 2008 Conacyt Scholarship. Mexico.
- 2007 Guest researcher. Mexico.

JOURNAL COMMITTEE

- 2022 Special Issue: Advances in Quantum Machine Learning and Quantum Information Guest Editor.
- 2022 Special Issue: Standards and Ethics in AI Guest Editor.
- 2020 ANIEI Editor committee.

STUDENT ADVISING AND COMMITTEES

- 2020 Mentor. Baylor University. USA
- 2018 Master thesis research advisor. UNAM. Mexico
- 2020 Bachelor thesis research advisor. UNAM. Mexico

2020 Examination committee. UNAM. Mexico
 2017 Examination committee. UNAM. Mexico
 2017 Examination committee. UNAM. Mexico

PROJECTS

2026 Exploratory structural and psychometric platform for institutional monitoring. FESAc-UNAM. Méx
 2024 Quantum in Kets Representation on Emerging Computing Era . Earlham College. USA
 2020 Quantum Machine Learning and applications. Baylor University. USA
 2020 QMexico initiative. QMexico. Mexico
 2019 Teaching-programming reinforcement at high school and undergraduate level. UNAM. Mexico
 2018 Probing New Physics and models using Machine Learning. UNAM. Mexico
 2016 Flavor physics and dark matter in beyond standard model. UNAM. Mexico
 2016 Flavor change in loop-level inside 2HDM in the $\phi \rightarrow VV$ process. UNAM. Mexico
 2015 Physics' Virtual Laboratory. UNAM. Mexico

COMPUTING AND PROGRAMMING

Python/Swift	Linux	Markdown	Mathematica Wolfram	Git
C/C++	IOSX	LaTeX	Gnuplot	Bash
Fortran	Windows	HTML	Office	make

LANGUAGES

Spanish	Native
English	C1
French	A1
German	A1 (In progress)

September 11, 2026

JAVIER ORDUZ PHD, MSc

LIST OF PUBLICATIONS

- [1] G. Valencia and J. Orduz, "A Succint Literature Review on Ising Models, and Quantum Cryptography," *TBD*, 2026.
- [2] L. Deligiannidis and J. Orduz, "Architectural and Complexity Foundations for Quantum-Accelerated Retrieval in Large Language Models," *Accepted to be Published soon*, 2026.
- [3] L. M. Montelongo and J. Orduz, "Regularized multivariate modeling: An institutional benchmarking framework," *TBD*, 2026.
- [4] J. Orduz, "Mathematical foundations for modern cryptography in the quantum era," in *Computational Science and Computational Intelligence*, H. R. Arabnia *et al.*, Eds., Cham: Springer Nature Switzerland, 2025, pp. 204–212, ISBN: 978-3-031-94956-2. DOI: 10.1007/978-3-031-94956-2_16.
- [5] S. N. Tisha, M. S. Rahman, and J. Orduz, "Quantum machine learning for heart disease detection: A case study," in *Computational Science and Computational Intelligence*, H. R. Arabnia *et al.*, Eds., Cham: Springer Nature Switzerland, 2025, pp. 58–66, ISBN: 978-3-031-94940-1.
- [6] P. Rivas *et al.*, "Quantum-Enhanced Representation Learning: A Quantvolutional Autoencoder Approach against DDoS Threats," *Machine Learning and Knowledge Extraction*, vol. 6, no. 2, pp. 944–964, 2024, ISSN: 2504-4990. DOI: 10.3390/make6020044. [Online]. Available: <https://www.mdpi.com/2504-4990/6/2/44>.
- [7] Rahaman, Md Shahidur, and Islam, Agm, and Orduz, Javier., "Quantune: An Automatic Music Generation Using Quantum Computing," in *LatinX in AI (LXAI) Research at ICML 2024*, <https://icml.cc/virtual/2024/38089>, 2024. [Online]. Available: <https://openreview.net/forum?id=0QaxgMx4bR%7D>.
- [8] P. Rivas *et al.*, "Chapter 15 - ai ethics for earth sciences," in *Artificial Intelligence in Earth Science*, Z. Sun, N. Cristea, and P. Rivas, Eds., Elsevier, 2023, pp. 379–396, ISBN: 978-0-323-91737-7. DOI: <https://doi.org/10.1016/B978-0-323-91737-7.00007-4>. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/B9780323917377000074>.
- [9] O. Ayoade, P. Rivas, J. Orduz, and N. Rafi, "Chapter 13 - satellite image classification using quantum machine learning," in *Artificial Intelligence in Earth Science*, Z. Sun, N. Cristea, and P. Rivas, Eds., Elsevier, 2023, pp. 337–355, ISBN: 978-0-323-91737-7. DOI: <https://doi.org/10.1016/B978-0-323-91737-7.00013-X>. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/B978032391737700013X>.
- [10] Khanal, B., Orduz, J., Rivas, P. and Baker, E., "Supercomputing leverages quantum machine learning and Grover's algorithm," *J Supercomput*, 2022. [Online]. Available: <https://doi.org/10.1007/s11227-022-04923-4%7D>.
- [11] Orduz, J. Rastogi, S. and Baker, E., *An introduction to quantum natural language processing and a study case*, International Conference on Machine Learning Conference: LatinX in AI (LXAI) Research Workshop 2022, Baltimore, Maryland USA., 2022. [Online]. Available: https://research.latinxinai.org/papers/icml/2022/pdf/poster_1.pdf%7D.
- [12] O. Ayoade, P. Rivas, and J. Orduz, "Artificial intelligence computing at the quantum level," *Data*, vol. 7, no. 3, 2022, ISSN: 2306-5729. DOI: 10.3390/data7030028. [Online]. Available: <https://www.mdpi.com/2306-5729/7/3/28>.
- [13] Z. Sun *et al.*, "A review of earth artificial intelligence," *Computers & Geosciences*, vol. 159, p. 105034, 2022, ISSN: 0098-3004. DOI: <https://doi.org/10.1016/j.cageo.2022.105034>. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S0098300422000036>.
- [14] T. Jui, O. Ayoade, P. Rivas, and J. Orduz, "Performance analysis of quantum machine learning classifiers," in *NeurIPS 2021 Workshop LatinX in AI*, 2021.
- [15] P. Rivas, L. Zhao, and J. Orduz, "Hybrid quantum variational autoencoders for representation learning," in *2021 International Conference on Computational Science and Computational Intelligence (CSCI)*, 2021, pp. 52–57. DOI: 10.1109/CSCI54926.2021.00085.

- [16] B. Khanal, P. Rivas, J. Orduz, and A. Zhakubayev, “Quantum machine learning: A case study of grover’s algorithm,” in *2021 International Conference on Computational Science and Computational Intelligence (CSCI)*, 2021, pp. 79–84. DOI: 10.1109/CSCI54926.2021.00088.
- [17] B. Khanal, P. Rivas, and J. Orduz, “Human activity classification using basic machine learning models,” in *2021 International Conference on Computational Science and Computational Intelligence (CSCI)*, 2021, pp. 121–126. DOI: 10.1109/CSCI54926.2021.00093.
- [18] K. Sooksatra, P. Rivas, and J. Orduz, “Evaluating accuracy and adversarial robustness of quanvolutional neural networks,” in *2021 International Conference on Computational Science and Computational Intelligence (CSCI)*, 2021, pp. 152–157. DOI: 10.1109/CSCI54926.2021.00097.
- [19] Orduz, J. and Rivas, P. and Baker, E., “Quantum Machine Learning Foundations and Applications: A Succinct Literature Review,” in *International Conference on Scientific Computing*, To be published soon: <https://www.springer.com/series/11769>, Springer, Transactions on Computational Science and Computational Intelligence, July 2021.
- [20] Orduz, J. and Rivas, P. and Baker, E., “Quantum Circuits for Quantum Convolutions: A Quantum Convolutional Autoencoder,” in *International Conference on Scientific Computing*, To be published soon: <https://www.springer.com/series/11769>, Springer, Transactions on Computational Science and Computational Intelligence, August 2021.
- [21] Orduz, J. and Iyer, V., “Quantum Machine Learning concepts for Physicists,” To be published soon: <https://terc.mx/index.php/terc>, 2021.
- [22] Orduz-Ducuara, JA, “Conceptos de aprendizaje automático cuántico para físicos: Quantum Machine Learning concepts for Physicists,” *Tecnología Educativa Revista CONAIC*, vol. 8, no. 2, pp. 71–75, 2021. DOI: <https://doi.org/10.32671/terc.v8i2.212>.
- [23] Orduz, J. and Iyer, V, *Quantum Machine Learning concepts and applications*, LatinXAI at NeuRIPS. PDF: <https://tinyurl.com/yzgga8eu>, 2020.
- [24] Orduz-Ducuara, J. A., “Higgs decay mediated by top-quark with flavor-changing neutral scalar interactions,” *J. Phys. Conf. Ser.*, vol. 912, no. 1, Bautista, I. and de la Cruz Burelo, E. and Fernandez-Tellez, A. and Lopez-Castro, G. and Rodriguez-Cahuantzi, M. and Roig, P., Ed., p. 012032, 2017, See the website: <https://goo.gl/KFpxKU>. DOI: 10.1088/1742-6596/912/1/012032. arXiv: 1710.08984 (hep-ph).
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- [28] Orduz-Ducuara, Javier A, “Tecnicas en informatica educativa (TIE): LaTeX y Python (herramientas para la enseñanza de las ciencias),” *Revista Mexicana de Bachillerato a Distancia*, vol. 8, no. 15, pp. 124–137, 2016, See the website: <http://goo.gl/Dkz6S8>.
- [29] Diaz-Cruz, J. Lorenzo and Diaz, Enrique and Orduz-Ducuara, Javier A., “The texturized 2HDM (2HDM-TX) and Higgs signature at colliders,” *J. Phys. Conf. Ser.*, vol. 651, no. 1, Delepine, David and Napsuciale, Mauro and Ibarguen, Humberto Salazar, Ed., p. 012016, 2015, See the website: <http://goo.gl/ziuACv>. DOI: 10.1088/1742-6596/651/1/012016.
- [30] Diaz-Cruz, J. L. and Honorato, C. G. and Orduz-Ducuara, J. A. and Perez, M. A., “One-loop decays $A^0 \rightarrow ZZ, Z\gamma, \gamma\gamma$ within the 2HDM and its search at the LHC,” *Phys. Rev. D*, vol. 90, no. 9, p. 095019, 2014, See the website: <http://goo.gl/hKGv0F>. DOI: 10.1103/PhysRevD.90.095019. arXiv: 1403.7541 (hep-ph).
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- [33] Diaz-Cruz, J. Lorenzo and Hernandez-Lopez, Javier M. and Orduz-Ducuara, Javier A., “An extra Z' gauge boson as a source of Higgs particles,” *J. Phys. G*, vol. 40, p. 125 002, 2013, See the website: <http://goo.gl/LcUyPf>. DOI: 10.1088/0954-3899/40/12/125002. arXiv: 1304.0016 (hep-ph).
- September 11, 2026