Ruben Esteche Araújo
Curriculum Vitae

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Education

Federal University of Pernambuco — Recife, PE
Master of Science in Physics, Advisor: Eduardo O. Dias — May 2021–Present

- CAPES Academic Excellence Program Fellowship

Federal University of Pernambuco — Recife, PE
Bachelor of Science in Physics, Advisor: Wilson Barros — 2015–2020

- Project: "Fluid Interfaces: Curvature relations and Euler elastics ."

Extracurricular Experience

ITA Physics Workshop — São Paulo, SP
Technological Institute of Aeronautics (ITA) — July 2021

- Poster presentation on my current M.Sc. research
- https://www.efita.ita.br/

OSA & SPIE Student Chapters — Recife, PE
The International Society of optics and photonics event — July 2020

- Mini-course: Quantum Information & Computation foundations
- https://www.chaptersrecife.org/

PET - Tutorial Education Program — Fortaleza, CE
UFC - Federal University of Ceará program — July 2020

- Mini-course: Convolutional Neural networks with Tensorflow
- https://prograd.ufc.br/pt/programas-e-acoes/pet-ufc-programa-de-educacao-tutorial-universidade-federal-do-ceara/

Teaching

- **Teaching Assistant** at Federal University of Pernambuco — July –December 2019
  Physics for Computer Science (FI582) teacher: Prof. Fernando Luis de Araujo Machado

Fellowship

- Graduate Fellowship, CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior), Brazil (88887.623604/2021-00) — May 2021–2023

Interests

- **Quantum tunnelling** Quantum and electromagnetic approach
- **Quantum Entanglement** Causality relations in overlapping systems
- **Quantum computing and information** algorithms and experimental work, two level systems experience
- **Data Analysis and Statistical Methods** Python, C, Mathematica
- **Back/Front-End programming** Markdown, HTML

Languages

- **Portuguese:** Native speaker
- **English:** Fluent
- **French:** Intermediary (Course Delf certificate B1)
- **Spanish:** Intermediary

Projects

- M.Sc. Research - A Space-Time symmetrical extension of quantum mechanics (2021–Current) From the construction made by DIAS, E. O.; PARISIO, F. Space-time-symmetric extension of nonrelativistic quantum mechanics. Physical Review A, APS, v. 95, no. 3, p. 032133, 2017, we develop a new space-conditional solution in the scope of this theory for a particle in order to analytically establish the value of the tunneling time. At the moment, we are comparing our model with experimental results from direct measurements.

  Collaborators: Prof. Eduardo Olímpio Dias (Federal University of Pernambuco), Ricardo Ximenes (Physics Ph.D. Student, UW-Madison)
- Undergraduate Research - Fluid Interfaces: Curvature relations and Euler elastics. (2016–2017) We revisited Euler's studies of elastic in an attempt to analytically describe the curvature relationships between a two immiscible fluid system with different boundary conditions and viscosity. We conducted experiments in this system and the project was a great opportunity to learn about the experimental routine in laboratory.

  Collaborator: Prof. Wilson Barros Júnior (Federal University of Pernambuco)

References

- Prof. Eduardo Olímpio Dias 2021–Current
  Physics Department, Federal University of Pernambuco, Cidade Universitária-REC e-mail: eduardo.dias@ufpe.br
- Prof. Wilson Barros Júnior 2016–2017
  Physics Department, Federal University of Pernambuco, Cidade Universitária-REC e-mail: wilson.barros@gmail.com