

Juan Gabriel Balarezo Balarezo

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EDUCATION

Yachay Tech University

Bachelor of Applied Sciences (BASc) in Physics - GPA: 9/10

Oct. 2019 - Present

Urcuqui, Ecuador

Zhidmad High School

Secondary School - GPA: 8.88/10

Sep. 2012 - Jul. 2018

Gualaceo, Ecuador

SKILLS

Languages:

Spanish (native), English (fluent).

Computational Skills:

Python, C++, Wolfram Mathematica, MATLAB, Qiskit, DFTB+, LaTeX

Operative Systems:

Windows, Linux.

RESEARCH AND EXPERIENCE

Research Internship

Jun. - Aug. 2024

Project: Quantum Cellular Automata for Quantum Error Correction

ML4Q - Cluster of Excellence "Matter and Light for Quantum Computing", RWTH Aachen University, Germany

Supervisor: Prof. Dr. Markus Müller, Ph.D student Don Winter

- Performing a numerical performance analysis of 1-dimensional quantum cellular automata for quantum error correction of noisy quantum states.

Teaching Assistant

Mar. - May 2024

School of Physical Sciences and Nanotechnology

Supervisor: Wladimir Banda-Barragán Ph.D

- Assistant in the Computational Physics I Lecture of the Department of Physics.

Research Assistant

Mar. - May 2023

Project: Development of a Novel SERS Sample Holder Protocol for Enhanced High-Sensitivity Detection

School of Physical Sciences and Nanotechnology

Supervisor: Carlos Reinoso Ph.D

- Development of an AgNP's green synthesis protocol for SERS applications.

Teaching Assistant

Dec. 2022 - Mar. 2023

School of Physical Sciences and Nanotechnology

Supervisor: Carlos Reinoso Ph.D

- Assistant in the Oscillations, Electricity and Magnetism Lecture of the Department of Physics.

TRAINING

C++ Professional Course

Jan. 2024 - Present

Azul School

- Syntaxis, Data Types, Variables, Control tructures.
- Data Structures, Functions and Pointers.

QWorld QClass23/24 <i>QWorld Organisation/ Faculty of Computing, University of Latvia</i>	Sep. 2023 - Mar. 2024
<ul style="list-style-type: none"> • Quantum computing, programming, and algorithms. • Quantum information, Quantum error correction. 	
First School of Quantum Computing (Quiskit Fall Fest) <i>National University of San Marcos, Perú</i>	Oct. 2022
<ul style="list-style-type: none"> • Fundamentals of Quantum Mechanics. • Quantum Circuits and their gates. • Quantum algorithms and quantum error correction. 	
Python workshop for symbolic algebra <i>Yachay Tech University</i>	Aug. 2022
<ul style="list-style-type: none"> • Scipy for linear algebra, calculus and differential equations. 	
Hands-on Start to Wolfram Mathematica <i>Wolfram Training</i>	Jun. 2022
<ul style="list-style-type: none"> • Mathematica Basics, 2D and 3D Plotting, creating interactive manipulates and analysing data. 	
QWorld Quantum Summer School 2021 <i>QWorld Organisation</i>	Jul. 2021

AWARDS AND RECONGNITIONS

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|-------------------------------------------------|------------------|
| • Academic Excellence Scholarship - Yachay Tech | 2021-2023 |
| • Best High School Graduate. | 2018 |

EXTRACURRICULAR ACTIVITIES

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| • President of the Quantum Computing Club YT | 2024 |
| • Member of Computational Sciences Club | 2023 |
| • Member of the Yachay Tech English Conversation Club (ECC) | 2023 |
| • Member of the German Club Yachay Tech | 2023 |