

Juan S. Rojas

Curriculum Vitae

PERSONAL DETAILS

Address: Trieste, Italy.
Mail: jvelez_r@ictp.it
Webpage: [Personal Webpage](#)

Current Position: Postgraduate Diploma Student
in International Centre for Theoretical Physics.
Date: March 1, 2025

EDUCATION

Postgraduate Diploma Programme in Quantitative Life Science <i>ICTP - International Centre for Theoretical Physics</i> An intense, pre-PhD programme for talented students.	2024-2025
Bachelor in Physics <i>School of Physics Science and Nanotechnology, Yachay Tech University</i> GPA: 8.9/10	2018-2023

RESEARCH PROJECTS

Silver Nanoparticles and Antibacterial Activity (Published) <i>Synthesized nanoparticles using Moringa oil; tested on E. coli.</i> Advisor: Sarah Briceño and Francisco J. Alvarez, Ph.Ds	2024
Chaotic Griffiths Phase in Neuron Maps (Preprint in preparation) <i>Studied and classify heterogeneity that drives criticality in neural dynamics.</i> Co-author: Mario Cosenza, Ph.D	2024
Modeling Cultural Oscillations: Google Trends Study (Ongoing) <i>Modified Axelrod model with periodic external fields to replicate trends in Google data.</i>	2024
Bachelor Thesis: Griffiths Phase in Neuronal Networks <i>Investigated critical behavior in brain dynamics via coupled map-based neurons.</i> Advisor: Mario Cosenza, Ph.D	2023
Chimera States in neuronal dynamics <i>Research assistant in nationally founded project.</i> Advisor: Mario Cosenza, Ph.D	2022

LEADERSHIP EXPERIENCE

Podcast Developer, Neurona Errante <i>Hosted discussions with international scientists about curious phenomena and critical perspectives.</i>	2023 - 2024
Co-Director, Minicourse on Complex Systems <i>Led Ecuador's first minicourse on physical statistics in complex systems, LaConga-funded.</i>	2023
Co-Director, COSSY School <i>Organized the first Complex Systems School in Ecuador at Yachay, funded by ICTP.</i>	2023
Student Representative, GISC <i>Represented students in the Interdisciplinary Complex Systems Group.</i>	2022-2023
Scientific communicator on Young Optics Project	2021

WORKSHOPS, SCHOOLS AND INTERNSHIPS

Spring College of Complex Systems <i>ICTP, Trieste. Modality: Face to face.</i>	2025
Konstanz School of Collective Behaviour <i>Konstanz University, Germany. Modality: Face to face.</i>	2024

Spring College of Complex Systems <i>ICTP, Trieste. Modality: Face to face.</i>	2024
Minicourse on Lattice models on biological problems <i>ICTP-SAIFR, Brasil. Modality: Face to face.</i>	2023
Workshop on Signatures of Nonequilibrium Fluctuations in Life <i>ICTP, Trieste. Modality: Face to face.</i>	2023
3rd Latin American Conference on Complex Networks (LANET) <i>Universidad del Pacífico, Peru. Modality: Face to face.</i>	2023
Conference Presentation about Computational Physics <i>AMV Phys 2023 at Yachay Tech. Modality: Face to Face.</i>	2023
School on Information, Noise, and Physics of Life <i>ICTP. Modality: Online.</i>	2022
Internship on CIITT: Information measures behind time series <i>Research, Innovation and Technology Transfer Centre. Modality: Face to face.</i>	2022
Data visualization with Python <i>NanoPhysics day at Yachay Tech. Modality: Face to Face.</i>	2022

AWARDS

Second Place, Dorothy Coding Challenge <i>Three Ecuadorian Universities with ICTP-WF.</i>	2023
Best Poster, LANET Conference (International) <i>Griffiths Chaotic Phase in Dynamical Networks — Universidad del Pacífico, Peru.</i>	2023
Best Poster, NanoPhysics Day Vol.2 <i>Griffiths Phase in Networks: A Mechanism for Emergence of Conscious Brain States — Yachay Tech University.</i>	2023

EXTRACURRICULAR ACTIVITIES

Hult Prize Finalist, BioPink Project <i>Developed biotech solutions for sustainable shrimp farming.</i> Advisor: Danilo Mendoza	2022
Co-founder, Entrepreneur Club <i>Filling the gap industry-academia partnerships to address key challenges.</i> Advisor: Claudio Arcos, Ph.D.	2022

ONLINE COURSES

Model Thinker <i>Mathematical and computational models for complex problems.</i> Scott Page, Michigan University	2024
Nonlinear Dynamics <i>Mathematics and tools for studying chaotic systems.</i> Elizabeth Bradley, Santa Fe Institute	2024

SKILLS

<i>Languages:</i>	Spanish (native language) English (B2)
<i>Programming Languages:</i>	PYTHON, MATHEMATICA, R, L ^A T _E X, VASP,
<i>Shell</i>	
<i>Other:</i>	Visual Material Studio, GIMP, Audacity



Signature