

EDUCATION

Bariloche Atomic Center & Balseiro Institute	Bariloche, Argentina
Master of Science, Theoretical Condensed Matter Physics. GPA: 3.3	Aug 2022 - Jan 2024
◦ Graduate Courses: Quantum Theory of Solids · Quantum Field Theory · Open Quantum Systems · Topological Matter · Laser Physics · Quantum Many-Body · Material Science · Photonics	
Pontifical Catholic University of Peru (PUCP)	Lima, Peru
Bachelor of Science, Physics. GPA: 4.0	Mar 2016 - Dec 2021
Thesis: "Holographic Entanglement Entropy" ↗ · Advisor: PhD. Pablo Bueno ↗ , Barcelona University	
◦ Teaching Assistant: Classical Mechanics · Intro. to Algorithms · Office hours and assignment grading	

PROJECTS

- **Lseg-Net** [↗](#)
PyTorch implementation of the ICLR 2022 submission "Language-Driven Semantic Segmentation" by Li et al. Implemented a dense prediction transformer (DPT) from scratch and integrated it with CLIP in a multimodal embedding space.
- **Monte Carlo tree search for Connect4** [↗](#)
Python implementation of the Monte Carlo Tree Search (MCTS) algorithm for solving the board game. I used upper confidence bound policy for node selection and minimax for optimal move evaluation.
- **Graph coloring problem with quantum chromatic numbers**
Worked on quantum communication protocols where two spatially separated parties could solve a distributed task. Advised by PhD. Yoshiharu Kohayakawa [↗](#) at the University of Sao Paulo.

EXPERIENCE

Machine Learning Enginner Intern · Python · Scikit-Learn · Pytorch	Netherlands, Remote
<i>Spatialise</i>	Feb 2025 - Present
• Spatialise is a startup that combines satellite data and machine learning to provide scalable, precise soil health monitoring.	
• Development of scalable machine learning pipelines for industrial tasks using Google Cloud Platform	
Research Engineer · Python · PyTorch · Numpy · Git	Lima, Peru
<i>Contract · Remote Sensing Research Lab, Radio Astronomy Institute (INRAS)</i>	May 2024 - Oct 2024
• Developed a novel inversion algorithm based on multi-quasi-parabolic layers ↗ that reconstructs the electron density profile given ionospheric radio wave reflection data. Published results.	
• Participated actively and independently in the whole development pipeline, from theoretical work to algorithm development.	
Software Engineer Intern · Python · Docker · Git · Github	Lima, Peru
<i>Fromsolvers</i>	Jan 2024 - Mar 2024
• Part of the backend development team for the implementation of a Multiplayer Trivia Game App for sports and esports.	
• My work was mainly in Python and we developed a RESTful API with Django for the database and FastAPI framework.	
Research Assistant · Julia · Python	Bariloche, Argentina
<i>Bariloche Atomic Center and Balseiro Institute - Advisor: PhD. Armando Aligia ↗</i>	Aug 2022 - Dec 2023
• Researched the robustness of the topological protection of Majorana quasiparticles in superconducting nanowire systems using simple effective low-energy Hamiltonians and self-consistent Hartree-Fock methods. Published results.	
• Demonstrated that Coulomb repulsion compromises Majorana end states' topological protection only in short nanowires.	

PUBLICATIONS

Effect of interatomic repulsion on Majorana zero modes in a coupled quantum-dot-superconducting-nanowire hybrid system	
R. Kenyi Takagui-Perez and Armando Aligia · 2024 Physical Review B (PRB)	
[ArXiv] [PRB]	
A note on an inversion algorithm for vertical ionograms for the prediction of plasma frequency profiles	
R. Kenyi Takagui-Perez · 2024 arXiv Preprint	
[ArXiv] [Repository]	

COURSEWORK

Summer School of Machine Learning - PUCP	Jan. 2025
Deep Learning Specialization - DeepLearning.AI ↗	Sep. 2024
Competitive Programming Training Camp - Argentina	Jun. 2020
Brazilian ICPC Summer School - Brasil	Jan. 2020

HONORS AND AWARDS

• Full Tuition Scholarship, National Atomic Energy Commission & Balseiro Institute	2023,2022
• Highest-Graded Undergraduate Thesis in Physics	2022
• Top 25, ICPC (International Collegiate Programming Contest) South America Finals	2020,2019
◦ Compited against 150 teams and 450 students from 6 countries. Last phase before World Finals.	
• Top 100, IEEEExtreme (IEEE 24h Annual Hackathon)	2021, 2020
◦ Ranked in the top 1.7% out of 5570 teams in 2021 and in the top 2.6% out of 3722 teams in 2020.	
• Top 10, International Theoretical Physics Olympiad for Undergraduates	2019

PROFESSIONAL SKILLS

Programming:	Python · C/C++ · Julia
Frameworks:	PyTorch · TensorFlow · NumPy
Tools:	Jupyter Notebooks · Github · Git · Bash · L ^A T _E X
Languages:	Spanish(native) · English(advanced) · Portuguese(basic) · French(basic)

EXTRACURRICULAR ACTIVITIES

Competitive programming, literature, music interpretation, endurance cycling