Evelyn Coronel

MSc. in Physics
Particles and Fields Division
Instituto Balseiro
Centro Atómico Bariloche
Universidad Nacional de Cuyo
Bariloche, Rio Negro, Argentina

evelyn.coronel@ib.edu.ar
linkedin.com/in/evelyn-coronel/
github.com/astrocronopio
Personal Website

Experience

Deutsches Elektronen-Synchrotron DESY &
Humboldt-Universität zu Berlin
PhD Student
August 2021 - Present
Fields: Particle Physics, Machine Learning, Generative Models, GAN

Engineering School Research Division - Universidad Nacional de Asunción
Research Intern
May 2021 - July 2021
Fields: Particle Physics, Muon detectors

Cortical.com, Inc.
Consultant
December 2020 - July 2021
Fields: Machine Learning, Deep Learning, Unsupervised Learning, Learning Algorithms

I wrote, tested, and developed codes and algorithms for unsupervised learning using ideas and techniques I have learned from physics and probability. I used to work remotely with meetings with my coworkers during the week.

Instituto Balseiro - Universidad Nacional de Cuyo
(Balseiro Institute - Cuyo National University)
Master's Degree, Physics
August 2019 - February 2021
Fields: High Energy Physics, Cosmic Rays, Data Analysis
Advisor: Prof. Dr. Silvia Mollerach

I used C++ and the ROOT framework (a particle physics framework developed at CERN) to analyze the impact of atmosferic condition effects over the measurements of atmospheric showers of secondaries particles generated by cosmic rays over 1 EeV. After this, I searched for large scale anisotropies in the 1 EeV - 2 EeV energy range of the Pierre Auger's datasets.

The Pierre Auger Observatory
Student Intern
August 2019 - February 2021
Fields: High Energy Physics, Cosmic Rays, Data Analysis

I worked with the data gathered by the Observatory for my Bachelor's and Master's degrees. This work consisted of searching features of the arrival direction of ultra-high energy cosmic rays.

Cortical.com, Inc.
Intern
April 2020 - June 2020
Fields: Machine Learning, Deep Learning, Unsupervised Learning, Learning Algorithms

During a remote internship, I was part of a team analyzing and developing different unsupervised learning algorithms for a Silicon Valley based company. I learned to approach different problems with a more pragmatic point of view,beyond the mathematical models.

Laboratorio de Fótonica y Optoelectrónica
Centro Atómico Bariloche
(Laboratory for Photonics and Optoelectronics - Bariloche Atomic Center)
Student Intern
January 2019 - June 2019 (6 months)
Fields: Solid State Physics, Semiconductors Physics, Polariton Physics
Advisor: Prof. Dr. Alejandro Fainstein

As an undergraduate student, I worked in the first stage of measurements of the Bose–Einstein condensation of polaritons in the Bariloche Atomic Center. For which in a later paper, I was acknowledged for my work in the following paper *Chafatinos, D.L., Kuznetsov, A.S., Anguiano, S. et al. Polariton-driven phonon laser. Nat Commun 11, 4552 (2020).*(link).

Education

Humboldt-Universität zu Berlin
PhD in Physics Candidate
August 2021 - Present

Instituto Balseiro - Universidad Nacional de Cuyo
Master's degree, Physics
August 2019 - February 2021

Dissertation:"Análisis de direcciones de arribo de rayos cósmicos de ultra-alta energía en el Observatorio Pierre Auger" (Analysis of the Arrival directions of Ultra High Energy cosmic rays detected by The Pierre Auger Observatory). I graduated with an overall 7.16*/10 GPA

Instituto Balseiro - Universidad Nacional de Cuyo
Bachelor's degree, Physics
August 2017 - December 2019

Dissertation:"Análisis de direcciones de arribo de rayos cósmicos de ultra-alta energía en el Observatorio Pierre Auger" (Analysis of the Arrival directions of Ultra High Energy cosmic rays detected by The Pierre Auger Observatory). I graduated with an overall 8.16/10 GPA

Universidad Nacional de Asunción (Asuncion National University)
San Lorenzo, Paraguay
Electrical and Electronics Engineering
2015 - 2017

I completed 3 semesters of education to satisfy the requirements of the *Instituto Balseiro* admission process. I completed the course with an overall 5.0/5.0 GPA.

OMAPA - Organización Multidisciplinaria de Apoyo a Profesores y Alumnos
Asunción, Paraguay
Student
October 2013 - October 2014

Courses provided by OMAPA and intended for highly skilled high school students in Paraguay.

Colegio Nacional "Don Florencio Zárate"
Sapucai, Paraguay
High School Diploma
2012 - 2014

Valedictorian. I graduated with honors as an agriculture technician

Languages

I'm a Spanish and Guarani native speaker and a fluent English speaker. Results of the TOEFL iBT test taken on 11/01/2021: Reading: 27/30 , Listening: 29/30, Speaking: 19/30, Writing: 25/30. Full score 100/120.

Skills

Data Analysis	Research	LaTeX
C/C++	Data Science	Bash (Programming Language)
Python	High Energy Physics	CUDA (Programming Language)
Machine Learning	Physics	Linux Based Operating Systems
Git		

Honors & Awards

Scholarship
Comisión Nacional de Energía Atómica
(Argentinian National Atomic Energy Commission)
August 2017 - Present

Scholarship granted to the students of the Instituto Balseiro.

Scholarship
Itaipu Binacional
June 2015 - July 2017

State-founded scholarship for outstanding students from low-income families in Paraguay

Silver Medal
Latin American Astronomy and Astronautics Olympiad
Minas, Uruguay
August 2014

Olympiad for high school level students. We were tested for basic astrophysics calculations and water rockets construction.

Scholarship
OMAPA
October 2013 - October 2014

Conference

104^a Reunión de la Asociación Física Argentina
104^{th} Argentinian Physics Association Annual Meeting
September 30^{th} 2019 - October 3^{rd} 2019

Poster: Condensado de Bose-Einstein de polaritones en microcavidades ópticas de (Al,Ga)As. *(Bose-Einstein Condensation of polaritons in (Al,Ga)As optical cavities)*

Publications

E. Coronel and S. Mollerach, *Large-scale anisotropies of the All Triggers Dataset.* GAP 2021-018. The Pierre Auger Collaboration Internal Report.

References

Prof. Dr. Silvia Mollerach
Particles and Fields Division
Centro Atómico Bariloche and Instituto Balseiro, CONICET
Universidad Nacional de Cuyo
mollerach@gmail.com
+549 (2944) 445151/41

Prof. Dr. Alejandro Fainstein
Laboratory for Photonics and Optoelectronics
Centro Atómico Bariloche and Instituto Balseiro, CNEA
Universidad Nacional de Cuyo
afains@cab.cnea.gov.ar
+549 (2944) 445100/5427

Prof. Dr. Gladys Nieva
Low-Temperature Division
Centro Atómico Bariloche and Instituto Balseiro, CNEA
Universidad Nacional de Cuyo
gnieva@cab.cnea.gov.ar
+549 (2944) 445171/160