

Evelyn Coronel

PhD in Physics Student
ATLAS Group
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Experience

Deutsches Elektronen-Synchrotron DESY & Humboldt-Universität zu Berlin

PhD in Physics Student
August 2021 - Present
Fields: Particle Physics, Machine Learning, Generative Models, GAN
Advisor: Prof. Dr. Judith Katzy

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 atmospheric condition effects over the measurements of atmospheric showers of secondary 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 Fotonica y Optoelectronica

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 Zárte”

Sapucaí, Paraguay

High School Diploma

2012 - 2014

Valedictorian. I graduated with honors as an agriculture technician

Languages

I’m a Spanish and Guaraní 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	L ^A T _E X
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

104th Argentinian Physics Association Annual Meeting
September 30th 2019 - October 3rd 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.

Public Talks & Interviews

Egresada del Instituto Balseiro realizará su doctorado en el Experimento ATLAS [Spanish]

August 28th, 2021

[Publication link](#)

Evelyn Coronel - Un ejemplo de superación [Spanish]

August 26th, 2021

[Video link](#)

“Mi recomendación es alejarse del ‘así nomás’” [Spanish]

June 13th, 2021

[Publication link](#)

Conociendo a Evelyn Coronel [Spanish][Interview]

April 20th, 2020

[Video link](#)

TIGO - Historias de Vida - Evelyn [Spanish][Interview]

September 15th, 2015

[Video link](#)

OMAPA, Programa Paraguay Resuelve 2011 - 2014 [Spanish][Interview]

August 22th, 2014

[Video link](#)

News

Evelyn Coronel ex olímpica de OMAPA admitida en el CERN para un doctorado en Física [Spanish]

June 10th, 2021

[Publication link](#)

De Sapucaí a Alemania: compatriota trabajará en experimento Atlas del CERN y logrará su doctorado [Spanish]

June 9th, 2021

[Publication link](#)

Evelyn Coronel: De Sapucaí a Bariloche para estudiar Física [Spanish]

June 22th, 2017

Publication link

Jóvenes de OMAPA entre 5 los primeros puntajes de las Becas Itaipú [Spanish]

February 2nd, 2015

Publication link

4 Medallas para Paraguay en la Olimpiada Latinoamericana de Astronomía y Astronáutica 2014 [Spanish]

October 16th, 2014

Publication link

References

Prof. Dr. Silvia Mollerach
Particles and Fields Division
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Prof. Dr. Alejandro Fainstein
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Prof. Dr. Gladys Nieva
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