

Diyaselis DELGADO LÓPEZ

Ph.D. Candidate | Experimental High Energy Physics

+1 787 310 7350 @ ddelgado@g.harvard.edu diyaselis.com

linkedin.com/in/diyaselis github.com/diyaselis orcid.org/0000-0002-4306-8828 harvardlppc

Graduate student and research associate in the Laboratory for Particle Physics and Cosmology (LPPC) at Harvard University, in Professor Carlos Argüelles-Delgado's group. Currently working in the IceCube Neutrino Observatory at the South Pole, with interests in neutrino phenomenology and Dark Matter studies.

EDUCATION

2020 - Present Ph.D. in Experimental High Energy Physics, **Harvard University** (Expected Graduation - May 2025)
2015 - 2020 B.Sc. in Theoretical Physics and Applied Mathematics, **University of Puerto Rico - Mayagüez**

PROFESSIONAL EXPERIENCE

September 2023 August 2023	Research Assistant CHIBA UNIVERSITY, Japan <ul style="list-style-type: none">> Under the supervision of Prof. Aya Ishihara.> Worked on the R&D of the IceCube Neutrino Observatory Upgrade. <p>Neutrino Physics Astrophysics Hardware</p>
Present September 2020	Research Assistant HARVARD UNIVERSITY, MA, USA <ul style="list-style-type: none">> Under the supervision of Prof. Carlos Argüelles Delgado.> In consolidation of doctoral degree requirements. <p>Neutrino Physics Astrophysics HEP - Phenomenology BSM Dark Matter</p>
August 2019 May 2019	Research Assistant CORNELL UNIVERSITY, NY, USA <ul style="list-style-type: none">> Under the supervision of Prof. Jim Alexander, as part of the CLASSE-REU program.> Evaluated strain gauge measurements of carbon fiber Dee for the CMS Phase-2 Upgrade of the Tracker Forward Pixel Detector. <p>HEP - Experimental Detector Physics Hardware</p>
December 2018 June 2018	Research Assistant CERN, Geneva, Switzerland <ul style="list-style-type: none">> Under the supervision of Dr. Kati Lassila-Perini, as part of the CERN Non-Member State Summer Student program.> Working period of September to December was sponsored by the University of Michigan - Ann Arbor CERN REU program.> Tested various analysis examples for preservation and reproducibility via computational workflows for the CMS experiment.> Major contribution to the computational workflows for the analysis with CMS 2011-2012 raw data and Monte Carlo simulations to re-implement the Higgs boson discovery. <p>HEP - Experimental Open-Data Analysis Software Development</p>
May 2020 August 2017	Research Assistant UNIVERSITY OF PUERTO RICO - MAYAGÜEZ, PR, USA <ul style="list-style-type: none">> Under the supervision of Prof. Sudhir Malik.> Analyzed event displays for optimized particle identification from proton-proton beam collisions in the CMS Detector, specialized searches for supersymmetry (SUSY) and top tagging. <p>HEP - Experimental CMS BSM Analysis Software Development Machine Learning</p>

AWARDS AND SCHOLARSHIPS

2022	Award , TeVPA Research Video Award, KINGSFORD, ON, CANADA
2022	Fellowship , European Physical Society Fellowship for the Intl. School of Nuclear Physics, ERICE, ITALY
2022	Scholarship , Jens Aubrey Westengard Scholarship, HARVARD UNIVERSITY, MA, USA
2022	Scholarship , Leon Rosenfeld Foundation, NIELS BOHR INSTITUTE, COPENHAGEN, DENMARK
2022	Grant , International Conference on High Energy Physics (ICHEP), BOLOGNA, ITALY
2020	Fellowship , Harvard Graduate School of Arts and Sciences Prize Fellowship, MA, USA
2020	Award , Enrico Fermi Award, DEPARTMENT OF PHYSICS, U. PUERTO RICO, MAYAGÜEZ, PR, USA
2019	Scholarship , Retired Professor's Association (ACJ) Scholarship, MAYAGÜEZ, PR, USA
2017	Scholarship , Retired Professor's Association (ACJ) Scholarship, MAYAGÜEZ, PR, USA

COMMUNITY INVOLVEMENT AND OUTREACH

- > **Harvard LPPC YouTube Channel**, Science Communication Initiative, focused on general audience educational videos.
- > **IAIFI Affiliate Member**, NSF AI Institute for Artificial Intelligence and Fundamental Interactions.
- > **IceCube Diversity Taskforce Member**, IceCube Collaboration.
- > **IceCube Collaboration MasterClass (English & Spanish)**, Outreach activity for Middle and High school students.
- > **SACNAS Affiliate Member**, Society for Advancement of Chicanos/Hispanics & Native Americans in Science.
- > **Women in Physics Member**, Harvard University Chapter

TEACHING EXPERIENCE

Present September 2022	Teaching Fellow HARVARD UNIVERSITY, MA, USA > I was a teaching assistant in the following Undergraduate Level PHYSICS classes: Introductory Electromagnetism and Statistical Physics (Fall 2022) Electromagnetism Lab (Fall 2023)
May 2020 January 2018	Teaching Assistant UNIVERSITY OF PUERTO RICO - MAYAGÜEZ, PR, USA > I was a teaching assistant in the following Undergraduate Level GENERAL SCIENCE classes: Calculus General and Advanced Physics Probability and Statistics Computational Techniques in Science and Engineering

CONFERENCES AND WORKSHOPS

INVITED TALKS AND SEMINARS

INTERNATIONAL SCHOOL OF NUCLEAR PHYSICS, ETTORE MAJORANA FOUNDATION, ERICE, ITALY	Plenary Talk	SEPTEMBER 2022
DARK GHOSTS, UNIVERSITY OF GRANADA, GRANADA, SPAIN	Parallel Talk	MARCH 2022

TALKS AND SEMINARS

SÃO PAULO ADVANCED SCHOOL ON MULTI-MESSENGER ASTROPHYSICS, SÃO PAULO, BRAZIL	Parallel Talk	MAY 2023
APS APRIL MEETING (VIRTUAL), MINNEAPOLIS, MINNESOTA, USA	Parallel Talk	APRIL 2023
TEVPA, QUEEN'S UNIVERSITY, KINGSTON, CANADA	Parallel Talk	AUGUST 2022
NBIA NEUTRINO SUMMER SCHOOL, NIELS BOHR INSTITUTE, COPENHAGEN, DENMARK	Seminar Talk	JULY 2022
APS APRIL MEETING, NEW YORK CITY, NY, USA	Parallel Talk	APRIL 2022
TEVPA (VIRTUAL), CHENGDU, CHINA	Parallel Talk	DECEMBER 2021
COMHEP (VIRTUAL), CHENGDU, CHINA	Parallel Talk	DECEMBER 2021
CMSDAS, FERMI NATIONAL LABORATORY (FERMILAB), BATAVIA, IL, USA	Parallel Talk	JANUARY 2020
PHYSICS SYMPOSIUM, UNIVERSITY OF PUERTO RICO, MAYAGÜEZ, PR, USA	Plenary Talk	SEPTEMBER 2019
JTM/PRISM CONFERENCE, UNIVERSITY OF PUERTO RICO, MAYAGÜEZ, PR, USA	Parallel Talk	MAY 2019
CERN STUDENT SYMPOSIUM, CERN, GENEVA, SWITZERLAND	Parallel Talk	DECEMBER 2018

POSTER SESSIONS

ICHEP, BOLOGNA, ITALY	JULY 2022
NEUTRINO 2022 (VIRTUAL), SEOUL, SOUTH KOREA	MAY 2022
ASTRODARK (VIRTUAL), KAVLI IPMU, TOKYO, JAPAN	DECEMBER 2021
SPS PHYSCON, PROVIDENCE, RI, USA	NOVEMBER 2019
APS APRIL MEETING, DENVER, CO, USA	APRIL 2019
APS CUWIP MEETING, NORTHWESTERN UNIVERSITY, EVANSTON, IL, USA	JANUARY 2019
CERN SUMMER STUDENT POSTER SESSION, CERN, GENEVA, SWITZERLAND	AUGUST 2018

PEER-REVIEWED PUBLICATIONS

SELECTED PUBLICATIONS IN PARTICLE PHYSICS

SEARCHES FOR CONNECTIONS BETWEEN DARK MATTER AND HIGH-ENERGY NEUTRINOS WITH ICECUBE, PREPRINT ARXIV: 2205.12950. IceCube Collaboration. Submitted to JCAP.
CONTRIBUTION: Reviewed and edited plots and content for final draft submission.

SELECTED PUBLICATIONS IN ASTROPHYSICS AND ASTROPARTICLE PHYSICS

DARK MATTER DECAY TO NEUTRINOS, PREPRINT ARXIV: 2210.01303. C.A. Argüelles, D. Delgado, A. Friedlander, A Kheirandish, I. Safa, A.C. Vincent, and H. White.

CONTRIBUTION: Computed the galactic contribution from gamma-ray experiments; aided the galactic computation of the neutrino experiments.

> *Also in* Proceedings of 41st International Conference on High Energy Physics — PoS(ICHEP2022)

SELECTED PUBLICATIONS IN STATISTICS, COMPUTING, AND EXPERIMENTAL METHODS

OPEN DATA PROVENANCE AND REPRODUCIBILITY: A CASE STUDY FROM PUBLISHING CMS OPEN DATA, EPJ WEB CONF. 245 (2020) 08014. T. Šimko, H. de Bittencourt, E. Carrera, Edgar, D. Delgado, C. Lange, K. Lassila-Perini, A. Lintuluoto, L. Lloret, T. McCauley, J. Okraska, D. Prelicpean, and M. Savaniakas.

CONTRIBUTION: Contributed to the development of the platform and implemented testing examples using CMS Open Data.