

Brian Omar Cruz Rodríguez

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Education

2014 – 2022 (expected) B.S in Theoretical Physics, University of Puerto Rico – Mayagüez Campus

Research Experience

Fall 2019 - present Experimental particle physics, CMS Experiment Collaboration from CERN, supervised by Dr. Sudhir Malik

Research Activities

January - May 2018 Took an introduction to C++ course

January - May 2019 Took a computational physics course in python

June - July 2020 CMS Data Analysis School

- Using CMSSW on a bash shell and software tools such as ROOT to analyze CMS open data

July 2020 Virtual outreach workshop to teach python coding to K-12 STEM teachers using Google Colab notebooks

- Taught Markdown and LaTeX syntax and basic python to help them play with the code of four provided notebooks: to study the Higgs-to-four-lepton decay analysis using 2011-2012 data from CERN, to calculate the invariant mass, to measure air pressure, and to plot heat maps

August 2020 Virtual C++ / Standard Template Library class given by Glenn Downing, offered by Fermilab

- Class about the syntax and semantics of C++ and the Standard Template Library

September 2020 CMS Open Data workshop offered by Fermilab LPC

- Workshop to get hands-on experience on scouting CERN's open data and using software tools such as a virtual machine to run an analysis of the data

October 2020

Machine Learning for Science Hackathon Competition participation,
by Dr. Sergie Glyzer

- Using machine learning and deep learning to detect potential Higgs signal from one of the background processes that mimics it