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**European Organization for Nuclear Research
(CERN)**
Summer Student Programme Admission Committee

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Dear Admission Committee,

Warm greetings! My name is Mariana Isabel Vivas Albornoz, I'm a 22-year-old Physics student at the Universidad Central de Venezuela and I am very interested in participating in the 2020 CERN Summer Student Programme.

From a very young age, I was interested in physics because I was curious about the world around me. Initially, I was hesitant to major in physics because I did not think I would like mathematics. However, over the years I have really grown to love the subject.

In the latter semesters of my degree I have enjoyed my courses in modern physics, the corresponding practical work and ultimately CEVALE2VE's online course on Introduction to Particle Physics. I was fascinated by what I studied, specifically about the research on physics beyond the Standard Model. This really motivated me to learn more about the subject so I decided to start working on a final project in this area for my bachelor degree.

The project is based on the [2020 Large Hadron Collider \(LHC\) Olympics](#) open dataset, and focuses on the search for proposed new particles that decay into dijets using machine learning and deep learning techniques, like neural networks. This will require the knowledge on the theory of the dijets events and data analysis techniques in Python (using libraries like Pyjet and Fastjet).

As I approach the end of my bachelor degree, I have set the goal of becoming involved in the experimental aspect of high energy physics, a field which is not very developed at my home university where research is mostly done in the theoretical side. I would be really excited to attend the CERN Summer Student Programme to experience the new ways in which physics can be taught today, learning from, and working along with, some of the most experienced scientists in the world.

I am a good candidate for the program because I am very committed, hard working, organised and responsible. I also relish working as part of a team and look forward to increasing my knowledge about different areas of physics research outside my own speciality.

The progress and achievements obtained through the years I have worked towards my degree offer a clear indication of my dedication and passion for science as well as the support of teachers, family, and fellow students. Without a doubt, it requires a tremendous amount of self-discipline and cooperation to continue my career while facing the political and economic situation in my country, Venezuela, which affects every aspect of life.

I think that people who are dedicated to science have the responsibility to share new knowledge with others and this gives me a strong motivation to apply to your program. This program will give me the opportunity to learn and then spread the latest developments in high energy physics back in my home country. I would be very grateful for the chance to participate in the CERN Summer Student Programme and look forward to hearing from you.

Sincerely,

Mariana Isabel Vivas Albornoz