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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 Central University of 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 always curious about the world around me. Initially, I was hesitant to major in physics because I did not think I would like mathematics. However, along the years mathematics became a dear subject.

In the last semesters of my career I have enjoyed my courses in modern physics, its laboratory and ultimately CEVALE's online course on Introduction to Particle Physics. I was fascinated by what I studied about the Standard Model and the physics research Beyond the Standard Model. This motivated me to learn more about the subject so I decided to start working on a final project in this area.

The project is based on the 2020 Large Hadron Collider (LHC) Olympics data for the search of proposed new particles that decay into dijets using machine learning and deep learning techniques like neural networks. Aside from the theory of the dijets events for proposed new particles, this will require the knowledge of computing techniques for data analysis in Python and the use of libraries like Pyjet and Fastjet.

As I approach the end of my four year, I have set the goal of becoming involved in the experimental aspects of high energy physics since at the Central University of Venezuela, the approach is more theoretical. I would be really excited to attend to CERN's Summer Student Program to experience new ways in which physics can be taught today, learning from -and working along with- the most experienced scientists in the area.

I'm a good candidate for the program because I am very committed to working hard and I'm organized, responsible and open to learning. I enjoy doing teamwork and look forward to increasing my knowledge about different areas of physics research outside my own specialty.

The progress and achievements obtained through the years I have worked towards my degree are a clear indication of my dedication 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 face 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.

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**