Poughkeepsie Chapter of the Association For Computing Machinery

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MEETING NOTICE

Free and open to the public

Topic: Machine Learning for Data Analysis of W Boson Pairs at the Large Hadron Collider

Speaker: Sam Kelson

When: Monday, January 9, 2023, 7:30 pm

Where: In Cyberspace

Directions: To obtain the URL for this video conference, *you **must** register to attend through Meetup.com/ACM-Poughkeepsie/*

https://meetup.com/ACM-Poughkeepsie/events/290496228/

Once you've done so, your Zoom link will appear on Meetup's page for this event.

About the Topic: Vector Boson Scattering (VBS) is a rare process at the Large Hadron Collider which holds the potential to unearth new physics. During the VBS process, the resulting W bosons have a characteristic polarization. The detector can't identify the polarizations because the W bosons decay too fast. Therefore, information regarding the W bosons' decay products must be used.

Due to the randomness in the VBS events and the large volume of data, machine learning is needed to differentiate between the polarization states. In this talk I will briefly go over the physics behind these events and then give a detailed discussion of the machine learning techniques used.

About the Speaker: Sam Kelson is a sophomore at Brandeis University studying physics. His undergraduate research is with the Brandeis High Energy Physics group which is an affiliate of the European Organization for Nuclear Research (CERN). Over the summer of 2022 Sam participated in the ATLAS Summer Undergraduate Program for Exceptional Researchers in which he presented the research he had conducted into same-sign WW VBS events. His areas of interest include experimental physics, machine learning, and nuclear fusion.

Cost: **Our meeting is Free and open to the public**

Dinner: **Because our meeting is virtual, we will not hold our normal dinner beforehand at the Palace Diner.**

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This page is available on the web at https://pok.acm.org.