Contribution ID: **72** Type: **Talk**

Panoptic Segmentation for Particle Identification in ProtoDUNE-SP

Thursday, August 4, 2022 3:26 PM (22 minutes)

The ProtoDUNE-SP Liquid Argon Time Projection Chamber is the prototype for the first far detector module of the Deep Underground Neutrino Experiment (DUNE). Convolutional Neural Networks have been developed and employed in the analysis of scientific data from ProtoDUNE, which exploits the high-resolution images and the fine details that the detector can capture. Despite these advantages, the classification of the different types of particles and interactions is still a challenge. With this motivation. In this talk, I will present the details and the application of a multi-task reconstruction algorithm using Sparse Convolutional Neural Networks for the task of panoptic segmentation, which simultaneously generates a voxel-by-voxel particle ID and clusters voxels into objects.

Attendance type

In-person presentation

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