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Applying Deep Learning in MicroBooNE

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Deep learning algorithms, which have emerged over the last decade, are opening up new ways to analyze data for many particle physics experiments. The MicroBooNE experiment, which is a neutrino experiment at Fermilab, has been exploring the use of such algorithms, in particular convolutional neural networks (CNNS). CNNs are the state-of-the-art method for a large class of problems requiring the analysis of image data. This makes CNNs an attractive approach as the MicroBooNE detector is a liquid argon time projection chamber, which produces high-resolution images of particle interactions. In this talk, I will discuss the ways CNNs can be applied to tasks like neutrino interaction detection and particle identification in MicroBooNE.

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Session Classification: Computing, Analysis Tools, and Data Handling

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