Contribution ID: **164** Type: **Poster**

Application of Convolutional Neural Networks to Reconstruct GeV-Scale IceCube Neutrino Events

The IceCube Neutrino Observatory instruments a cubic kilometer of ice at the South Pole to detect atmospheric and astrophysical neutrinos. IceCube consists of a 3D array of 5160 optical modules which detect light from relativistic charged particles resulting from neutrino interactions in the ice. This can be used to reconstruct the neutrino's energy and direction, but becomes particularly challenging at energies less than 100 GeV since IceCube is optimized for TeV-PeV scale neutrinos. These GeV-scale neutrinos are important for studying neutrino properties, such as the oscillation parameters. My work uses convolutional neural networks to reconstruct the energy and direction of these GeV-scale neutrinos in the IceCube detector.

Mini-abstract

Convolutional Neural Networks can be used to quickly reconstruct GeV-scale IceCube neutrino events

Experiment/Collaboration

IceCube

Primary author: MICALLEF, Jessica (Michigan State University)

Presenter: MICALLEF, Jessica (Michigan State University)

Session Classification: Poster session 4