Identifying Final State Particles in the NOvA Detectors with CNN DEREK DOYLE, Colorado State University, NOVA COLLABORATION — The NOvA experiment is a long-baseline neutrino oscillation experiment primarily designed to measure the parameters that govern neutrino oscillations through the use of two functionally identical liquid scintilator detectors. The near detector, located 800 meters from the NuMI beam source at Fermilab, is exposed to a large flux of neutrinos, producing enough neutrino interactions for high precision cross section measurements. These measurements aim to minimize overall uncertainties on oscillation parameter estimates. To reduce dependence on interaction models, the NOvA collaboration has developed a Convolutional Neural Network (CNN) approach to identifying individual particles interacting in the detectors. These individually identified particles aid in efficient signal and background classification across a wide range of cross section analyses. A summary of recent developments and performance results from NOvA's CNN approach to single particle classification will be presented.

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