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Machine Learning techniques on NOvA

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NOvA is a long baseline neutrino oscillation experiment. The NOvA experiment has made measurements using the disappearance of muon and the appearance of electron neutrinos and anti-neutrinos in the NuMI beam at Fermilab including the neutrino mass hierarchy and the lepton CP violating phase. Key to these measurements is the application of machine learning methods for identification of neutrino flavor. The use of these tools, adapted from computer vision, is becoming more widespread within NOvA and the field. These methods require rigorous validation to both understand and develop. I will present an overview of the NOvA experiment and machine learning techniques used for event selection as well as validation techniques used for these algorithms.

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