Machine Learning:Potential Application for Particle Identification[1] PARKER ADAMSON, Angelo State University, MIKE YOUNGS, Blinn College — In this project we examined the potential use of machine learning to significantly decrease the time required to analyze FAUST (Forward Array Using Silicon Technology) data without sacrificing the quality and confidence of the results. Networks of varying structure were first trained using SRIM which simulated perfect, 2%, and 5% detector resolution FAUST data. Each trained network was then tested on data disjoint from its training set of each resolution. Under the same procedure we trained and tested neural networks on real experimental data which had been identified using the traditional linearization method. This project establishes the validity and some constraints to the ultimate goal of this research, which is applying one network trained on data from a detector and then applying the network to further data from both that detector and other detectors, through the use of transfer learning, to expedite the analysis process.

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