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CPP Detector Design Using MVA

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The Charged Pion Polarizability(CPP) experiment is approved to run in Hall-D at Jefferson Lab using the GlueX detector. CPP requires that $\pi^+\pi^-$ production events be distinguished from $\mu^+\mu^-$ to better than 99% accuracy. This drives the design of a new MWPC-based detector capable of separating the π events from the μ events. A multivariate analysis of simulated data was initially done to study the feasibility of a detector with this level of performance. More recently, the design parameters of the detector have been refined using a similar technique. Details on the initial study and how machine learning has contributed to the detector design will be presented.