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Applying Machine Learning Techniques in National Instruments' LabView to Identify NMR Signals CONNOR MCCLAIN, DUSTIN KELLER, Univ of Virginia — National Instruments' LabView presents a unique opportunity for applying machine learning to Physics research because of its data-flow oriented programming. Dynamic nuclear polarized (DNP) targets in High-Energy and Nuclear scattering experiments require the use of a phase sensitive nuclear magnet resonance (NMR) detector to measure the polarization of the nucleons in the reaction. The NMR systems (Q-meters) are designed to operate within a well defined set of operational parameters which allows polarization measurements over the full dynamic range to within 3% relative error. In this study we apply well established methods of machine learning in LabView to recover reliable polarization and reduced error even when operating outside the design specifications of the systems.

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