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Can machine learning techniques help us to solve nuclear data problems?

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There is currently a world-wide "hype" of applying machine learning techniques to big data problems ongoing. Different machine learning techniques are applied to address questions from big on-line shops to solving difficult scientific problems. Here, we explore whether machine learning techniques can help us solve problems in nuclear data evaluation which cannot be satisfactorily addressed by conventional nuclear data methodology.

For instance, one major issue is the subjectivity of selecting differential and integral experimental data for nuclear data evaluation and validation. Due to the sheer amount of measurement and---in some cases nuclear data---information, it is often impossible to take into account all hidden inter-dependencies across a suite of experiments when selecting data for evaluations or validation. Here, we will show how machine learning techniques can be applied to address this issue and show in how far the algorithms are able to find physics motivated clusters of data and capture the inter-dependencies of data correctly.