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Machine Learning When you Know (Basically) Nothing.

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Machine learning in high energy physics relies heavily on simulation for fully supervised training. This often results in sub-optimal classification when ultimately applied to (unlabeled) data. At CTD2017, we showed how to avoid this problem by training directly on data using as input the fraction of signal and background in each training sample. We now have a new method that does not even require these fractions called Classification Without Labels (CWoLa). In addition to explaining this new method, we show for the first time how to apply these techniques to high-dimensional data, where significant architectural changes are required.

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