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Enhance Machine Learning Performance with Intel® Software tools

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The use of data analytics techniques, such as Machine Learning and Deep Learning, has become the key for gaining insight into the incredible amount of data generated by scientific investigations (simulations and observations). Therefore it is crucial for the scientific community to incorporate these new tools in their workflows, in order to make full use of modern and upcoming data sets. In this tutorial we will provide an overview on the most known machine learning algorithms for supervised and unsupervised learning. With small example codes we show how to implement such algorithms using the Intel® Distribution for Python*, and which performance benefit can be obtained with minimal effort from the developer perspective.
Furthermore, the demand of using Deep Learning techniques in many scientific domains is rapidly emerging and the requirements for large compute and memory resources is increasing. One of the consequences is the need of the high-performance computing capability for processing and inferring the valuable information inherent in the data.
We cover also how to accelerate the training of deep neural networks with Tensorflow, thanks to the highly optimized Intel® Math Kernel Library (Intel® MKL). We also demonstrate techniques on how to leverage deep neural network training on multiple nodes on a HPC system.

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Session Classification: Tutorials