

Supervised Machine Learning with Deep Neural Networks

Tuesday, August 29, 2017 2:15 PM (4 hours)

Machine learning with deep neural networks has seen tremendous advances in the last few years and is now the state-of-the-art method in a broad range of fields, including computer vision and natural language processing. Deep learning shines when dealing with large bodies of high-dimensional, complex data and is thus well suited for pushing the limits in high-energy particle and astroparticle physics.

This tutorial will introduce you to the fundamental concepts and some advanced techniques in deep learning and give you a hands-on introduction to designing, training and evaluating neural networks in supervised classification and regression tasks. As deep learning framework we will use TensorFlow via the Python interface (some familiarity with Python is assumed). The exercises will be performed on the VISPA platform which provides an analysis environment and access to a GPU cluster through your web browser. Hence all you will need is a tablet or laptop.

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Session Classification: Tutorials