Contribution ID: **5**   Type: **Hands-On Tutorial**

Machine Learning with Neural Networks

Wednesday, August 28, 2019 1:15 PM (4h 45m)

Machine learning, and especially deep learning, is one of the current hot topics in computer science and engineering. It has not only experienced tremendous advancements in its theoretical foundations during the last few years, but is now also the state-of-the-art method in a broad range of applications. In this course, you will learn the basic terms and approaches in machine learning, understand the fundamental concepts of logistic regression and neural networks as well as build your own first deep learning models.

Using small to mid-sized application use cases from science and computer vision you are going to experience how to put the gained knowledge into practice.

As the machine learning framework of choice, we are going to use the TensorFlow library as computational back-end to the deep learning library Keras in the Python programming language (some prior knowledge is necessary). Using modern GPU computing resources in a cluster computing system, we are going to have a look at typical machine learning applications, such as classification problems and numerical regression analysis.

Please make sure to bring your own laptop and refresh you basic knowledge on vectors and matrices. We are looking forward to having you!

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Session Classification: Tutorials