

# Towards new horizons with Machine Learning solutions on Intel IA

Ivan Kuzmin, Andrey Nikolaev

*INTEL*

## **Abstract**

### **Part 1**

This topic is supposed to be the first part of two sessions in a row for Machine Learning and Deep Learning topics. In the first part of this session we will discuss the overall ecosystem of Machine Learning algorithms, challenges and opportunities brought by the Big Data era, and how they are addressed by Intel software solutions. In the second part of the presentation we will review capabilities of Intel libraries that address Big Data problems. The rest of the session devotes to deep overview of Intel Data Analytics Acceleration Library, software solution that provides the building blocks for all stages of the data processing, from data acquisition till modeling and scoring. Architectural aspects, content of the capabilities, and performance of the library on Intels highly parallel CPUs will be discussed in this part of the session. Code samples that demonstrate interfaces and use of the library for solution of specific problems as well performance data will be presented and discussed during the talk.

### **Part 2**

This topic is supposed to be the second part of two sessions in a row for Machine Learning and Deep Learning topics. The first part of the session will discuss the capabilities available in Intel SW to enable high performance in Deep Learning applications. The rest of the session will review the features of two libraries, Intel Math Kernel Library and Intel Data Analytics Acceleration Library for support of Deep Learning, the performance of popular frameworks such as Caffe/Theano/Torch/etc enabled with Intel SW, and explain similarities and differences of two solutions. Code samples that demonstrate the interfaces of the libraries as well and ways to enable the SW underneath of the frameworks will be discussed.