



Contribution ID: 220

Type: **Workshop/BoF proposal**

## Optimized Artificial Intelligence Solutions by Intel

*Thursday, 6 December 2018 09:00 (1h 30m)*

### Description:

Join us for one day of hands-on sessions on Artificial Intelligence, and Machine & Deep Learning. Experience a unique opportunity to test out the latest performance optimized frameworks and tools, advanced coding knowledge and best practices to get started implementing AI guided by experts from Intel®.

### Target Audience:

Data Scientist, application developers and HPC benchmarkers targeting the deep learning and machine learning domain.

### Prerequisites:

Beginning to intermediate level of domain AI knowledge.  
Basic skills of programming, ideally some Python knowledge

Type of tutorial: Mix of lectures and hands-on tutorials

### Special Requirements:

Attendees should bring their laptop with an SSH- & VNC client  
Attendees will get for hands on-labs also access to the CHPC cluster

### Outline of full syllabus:

08:00 Registration

09:00 Introduction

- Introduction round & Agenda
- Introduction Intel Software Developer Tools
- Introduction to Machine Learning / Deep Learning

10:30 Morning Refreshment Break

11:00

Classic Machine Learning Tools

- Intel performance Libraries - MKL & DAAL
- Intel Distribution for Python (IDP) Introduction
- IDP Hands on labs

- o NumPy & MKL

- o K-Means Clustering & DAAL

- o SVM & DAAL

12:30 Lunch

13:30

Deep Learning (DL) Tools

- Intel performance Libraries for DL – MKL-DNN & MLSL
- Intel optimized Frameworks / TensorFlow
- o TensorFlow Image Classification Hands-on Lab

- o Introduction simple CNN

- o Monitored Training Session

15:00 Afternoon Refreshment Break

15:30

Deep Learning Tools (cont'd)

- Intel optimized Frameworks / TensorFlow (cnt'd)
    - o Horovod – distributed classification
    - o Importing external Images
    - o Custom batches
  - Benchmarking distributed TensorFlow (BKMs)
  - Deep Learning Scaling – large scale results (BigDL/Spark)
  - Wrap-Up & Q&A
- 17:00 End of Day

## **Presenter Biography**

**Primary authors:** STEYER, Michael; PREISS, Edmund (Intel)

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**Session Classification:** Optimized Artificial Intelligence Solutions by Intel

**Track Classification:** Workshops