Certificate of participation

Hugo Oliveira

took part from 08.05.2023 to 12.05.2023 in the training course

Introduction to Scalable Deep Learning

given by Dr. Stefan Kesselheim (Jülich Supercomputing Centre) and Dr. Jenia Jitsev (Jülich Supercomputing Centre) as part of the training programme of Forschungszentrum Jülich.

Contents

In this course, we covered machine learning and deep learning and how to achieve scaling to high performance computing systems. The course aimed at covering all levels, from fundamental software design to specific compute environments and toolkits.

We started the course with a presentation of high performance computing system architectures and the design paradigms for HPC software. In the tutorial, we familiarized the users with the environment. Furthermore, we gave a recap of important machine learning concepts and algorithms and the participants trained and tested a reference model. Afterwards, we introduced how deep learning algorithms can be parallelized for supercomputer usage with Horovod. Furthermore, we discussed best practicies and pitfalls in adopting deep learning algorithms on supercomputers and learned to test their function and performance. Finally we applied the gained expertise to large scale unsupervised learning, with a particular focus on Generative Adversarial Networks (GANs).

The course consisted of 18 lectures (18 hours).

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i.A. Andrea Claßen
Human Resource Development and Recruiting