

Big data tools for physics and astronomy

Monday 19 June 2017 - Monday 19 June 2017

Other Institutes

Book of Abstracts

Contents

The proton structure with artificial neural networks.	1
Watch this space: emerging trends and techniques that could transform physics and astronomy	1
Amsterdam Data Science	1
eScience	1
SurfSara	1
Determining the origin of the Galactic Center excess using convolutional neural networks	1
Scaling up in complexity	1
Generalizing LHC limits on Supersymmetry with Machine Learning	2
Accelerating the BSM interpretation of LHC data with machine learning	2
Good fits of gamma-ray data with high-dimensional modelling	2
Inter-experimental Machine Learning at the LHC	2
Collaborative machine learning for science with OpenML	2
Large Scale Machine Learning in Astronomy	2
Wrap-up and next steps	2
GRID Processing of LOFAR spectroscopic and imaging surveys	2
HPC Processing and Deep Learning Techniques for Classifying Radio Bursts	3

1

The proton structure with artificial neural networks.

Author: Juan Rojo¹

¹ *VU Amsterdam and Nikhef*

Corresponding Author: j.rojo@vu.nl

We present how a model-independent and bias-free determination of the internal structure of the proton can be achieved by means of Artificial Neural Networks.

3

Watch this space: emerging trends and techniques that could transform physics and astronomy

Corresponding Author: kyle.cranmer@cern.ch

4

Amsterdam Data Science

5

eScience

6

SurfSara

7

Determining the origin of the Galactic Center excess using convolutional neural networks

Corresponding Author: luc.hendriks@gmail.com

8

Scaling up in complexity

Corresponding Author: zaharid@gmail.com

9

Generalizing LHC limits on Supersymmetry with Machine Learning

Corresponding Author: b.stienen@science.ru.nl

10

Accelerating the BSM interpretation of LHC data with machine learning

12

Good fits of gamma-ray data with high-dimensional modelling

13

Inter-experimental Machine Learning at the LHC

Corresponding Author: sergei.gleyzer@cern.ch

14

Collaborative machine learning for science with OpenML

Corresponding Author: j.vanschoren@tue.nl

15

Large Scale Machine Learning in Astronomy

16

Wrap-up and next steps

Corresponding Author: j.rojo@vu.nl

17

GRID Processing of LOFAR spectroscopic and imaging surveys

18

HPC Processing and Deep Learning Techniques for Classifying Radio Bursts

Corresponding Author: leeuwen@astron.nl