

2nd Round Table on Machine and Deep Learning at DESY

Report of Contributions

Contribution ID: 0

Type: **not specified**

Convolutional Neural Networks for electron microscopy tomography

Friday 29 November 2019 10:10 (20 minutes)

Finding instances of a protein transmembrane complex using segmentation and classification with CNNs is presented. The presented project is a collaboration between DESY-IT and CSSB

Presenter: Dr HEUSER, Philipp (DESY)

Session Classification: ML/DL @ DESY-campus 1

Contribution ID: 1

Type: **not specified**

Generative Models for Fast Calorimeter Simulation

Friday 29 November 2019 10:30 (20 minutes)

Presenter: ERIN, Engin (DESY)

Session Classification: ML/DL @ DESY-campus 1

Contribution ID: 2

Type: **not specified**

ML methods for FEL scattering data analysis

Friday 29 November 2019 10:50 (20 minutes)

Presenter: Dr SADRI, Alireza (DESY)

Session Classification: ML/DL @ DESY-campus 1

Contribution ID: 3

Type: **not specified**

Machine learning in the DESY ATLAS group

Friday 29 November 2019 11:10 (20 minutes)

Presenter: POLLARD, Christopher (DESY)

Session Classification: ML/DL @ DESY-campus 1

Contribution ID: 4

Type: **not specified**

Automation of CMS workflow recovery

Friday 29 November 2019 11:45 (20 minutes)

Attempts to use ML to predict the operator action on the CMS simulation and data processing failed jobs.

Presenter: Dr BAKHSHIANSOHI, Hamed (DESY)

Session Classification: ML/DL @ DESY-campus 2

Contribution ID: 5

Type: **not specified**

Neural networks for small angle scattering data analysis.

Friday 29 November 2019 12:05 (20 minutes)

We propose a novel method of SAXS data analysis based on application of interconnected neural networks (perceptrons). For given experimental data from proteins, RNA or DNA our stack of networks evaluates R_g , D_{max} , MW, $p(r)$ and a noise-free scattering curve. This completely automatic approach has proved to be robust against experimental errors, applicable to data from particles of various nature, size, and shape. The method was implemented as a publicly available web service with a graphical interface, providing the possibility to inspect and download the results (<https://dara.embl-hamburg.de/gnnom.php>).

Presenter: Dr MOLODENSKIY, Dmitry (EMBL)

Session Classification: ML/DL @ DESY-campus 2

Contribution ID: 6

Type: **not specified**

Anomaly Detection for SRF Cavities

Friday 29 November 2019 12:25 (20 minutes)

The European XFEL uses superconducting radiofrequency cavities for the electron acceleration. In total 808 cavities are operated in pulsed mode with a 10 Hz repetition rate, which amounts to ~700 Million RF-pulses in 24 hours. This talk explores the possibility of monitoring anomalous behavior of individual cavities and determining levels of anomaly for each pulse.

Presenter: NAWAZ, Ayla (DESY/MSK)**Session Classification:** ML/DL @ DESY-campus 2

Contribution ID: 7

Type: **not specified**

Classification for Single Particle Imaging experiments

Friday 29 November 2019 12:45 (20 minutes)

Presenter: Dr IGNATENKO, Alexandr (DESY)

Session Classification: ML/DL @ DESY-campus 2