

# The bibliography

- Peter Nemeth, [Astroserver - Research Services in the Stellar Webshop](#)
- [Status Report of the DPHEP Collaboration: A Global Effort for Sustainable Data Preservation in High Energy Physics](#), Dec. 2015.

## Machine learning

- [NVIDIA открыла код StyleGAN](#), генератора лиц на основе машинного обучения. [NVIDIA Open-Sources Hyper-Realistic Face Generator StyleGAN](#)
- [TensorFlow](#). TensorFlow™ is an open source software library for numerical computation using data flow graphs.
- [PyTorch](#). PyTorch is a python package that provides two high-level features:
  - Tensor computation (like numpy) with strong GPU acceleration
  - Deep Neural Networks built on a tape-based autograd system
- [Caffe2](#). Caffe2 aims to provide an easy and straightforward way for you to experiment with deep learning and leverage community contributions of new models and algorithms.

## Метаданные

- [Provenance@Harvard](#)
- [CamFlow](#)
- [W3C PROV-DM](#). Data model for provenance

## Методы машинного обучения

- [The analysis of VERITAS muon images using convolutional neural networks](#)  
Применение нейросети типа convolutional neural network из библиотеки Keras (с TensorFlow в качестве интерфейса) в задаче идентификации частиц гамма-адроны в гамма-телескопе VERITAS.
- [Particle Identification in Cherenkov Detectors using Convolutional Neural Networks](#)  
Применение нейросети такого же типа тоже в TensorFlow к идентификации частиц электрон-мюон, правда, не в гамма-телескопах, а в другом черенковском астрофизическом проекте Super-Kamiokande.
- [Exploring deep learning as an event classification method for the Cherenkov Telescope Array](#)  
Применение нейросети такого же типа к идентификации гамма-адроны в будущих гамма-телескопах СТА. Правда, в качестве интерфейса к библиотеке Keras вместо TensorFlow используется другая аналогичная среда Theano.
- [A deep learning-based reconstruction of cosmic ray-induced air showers](#)
- [Что такое свёрточная нейронная сеть](#)
- [Deep learning](#)

## Инструменты

- [Intel nGraph](#): An open source library for developing frameworks that can efficiently run deep learning computations on a variety of compute platforms

## Форматы данных

### Инструменты описания бинарных форматов данных

#### Kaitai Struct

##### [Kaitai Struct](#)

Kaitai Struct is a declarative language used for describe various binary data structures, laid out in files or in memory: i.e. binary file formats, network stream packet formats, etc.

The main idea is that a particular format is described in Kaitai Struct language (.ksy file) and then can be compiled with ksc into source files in one of the supported programming languages. These modules will include a generated code for a parser that can read described data structure from a file / stream and give access to it in a nice, easy-to-comprehend API.

[Обратная разработка бинарных форматов с помощью Kaitai Struct](#)

#### DFDL

##### [Data Format Description Language \(DFDL\)](#)

Data Format Description Language (DFDL) is a language for describing text and binary data formats. A DFDL description allows any text or binary data to be read from its native format and to be presented as an instance of an information set. DFDL also allows data to be taken from an instance of an information set and written out to its native format. DFDL achieves this by leveraging W3C XML Schema Definition Language (XSDL) 1.0. It is therefore very easy to use DFDL to convert text and binary data to a corresponding XML document.

#### FlexT

[FlexT: язык спецификаций бинарных форматов данных](#)

## Методы агрегации

### Критерии функционирования системы

#### Best Practices in Research Data Curation

## Resources

### [Digital Curation Centre \(DCC\)](#)

The Digital Curation Centre (DCC) is an internationally-recognised centre of expertise in digital curation with a focus on building capability and skills for research data management. The DCC provides expert advice and practical help to research organisations wanting to store, manage, protect and share digital research data.

### [The DataONE Best Practices database](#)

The DataONE Best Practices database provides individuals with recommendations on how to effectively work with their data through all stages of the data lifecycle.

## Papers

- [Good enough practices in scientific computing](#)
- [Best Practices for Scientific Computing](#)
- [Ten Simple Rules for Digital Data Storage](#)
- [Ten Simple Rules for Reproducible Computational Research](#)
- [Towards a Model for Computing in European Astroparticle Physics](#)
- [MANAGING AND SHARING DATA](#)

## Прочее

### BigchainDB

#### [BigchainDB](#)

BigchainDB is for developers and organizations looking for a scalable, queryable database with blockchain characteristics such as decentralization, immutability and the ability to treat anything stored in the database as an asset.

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