

# **Machine Learning applied to Nuclear Physics, Experiment and Theory**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

# Linear Regression and intro to statistical data analysis

*Monday, 19 July 2021 14:00 (2 hours)*

**Presenter:** HJORTH-JENSEN, Morten (Michigan State University (USA))

Contribution ID: 2

Type: **not specified**

## **Logistic Regression and classification problems, intro to gradient methods**

*Tuesday, 20 July 2021 14:00 (2 hours)*

**Presenter:** HJORTH-JENSEN, Morten (Michigan State University (USA))

Contribution ID: 3

Type: **not specified**

## **Decision Trees, Random Forests and Boosting methods**

*Wednesday, 21 July 2021 14:00 (2 hours)*

**Presenter:** HJORTH-JENSEN, Morten (Michigan State University (USA))

Contribution ID: 4

Type: **not specified**

## **Basics of Neural Networks and writing your own Neural Network code**

*Thursday, 22 July 2021 14:00 (2 hours)*

**Presenter:** HJORTH-JENSEN, Morten (Michigan State University (USA))

Contribution ID: 5

Type: **not specified**

## **Beta-decay experiments, how to analyze various events, with hands-on examples**

*Friday, 23 July 2021 14:00 (2 hours)*

**Presenter:** Prof. LIDDICK, Sean (Michigan State University)

Contribution ID: 6

Type: **not specified**

## Neural Networks and Deep Learning

*Monday, 26 July 2021 14:00 (2 hours)*

**Presenter:** Prof. RAMANUJAN, Raghuram (Davidson College)

Contribution ID: 7

Type: **not specified**

## **From Neural Networks to Convolutional Neural Networks and how to analyze experiment (classification of events and real data)**

*Tuesday, 27 July 2021 14:00 (2 hours)*

**Presenter:** Prof. KUCHERA, Michelle (Davidson College)



Contribution ID: 8

Type: **not specified**

## **Discussion of nuclear experiments and how to analyze data, presentation of simulated data from Active-Target Time-Projection Chamber (AT-TPC)**

*Wednesday, 28 July 2021 14:00 (2 hours)*

**Presenter:** Prof. BAZIN, Daniel (Michigan State University)

Contribution ID: 9

Type: **not specified**

## Generative models

*Thursday, 29 July 2021 14:00 (2 hours)*

**Presenter:** Prof. KUCHERA, Michelle (Davidson College)

Contribution ID: 10

Type: **not specified**

## Reinforcement Learning

*Friday, 30 July 2021 14:00 (2 hours)*

**Presenter:** Prof. RAMANUJAN, Raghuram (Davidson College)

Contribution ID: **11**

Type: **not specified**

## Exercises