



# Fourth Machine Learning in High Energy Physics Summer School 2018

## Monday, 6 August 2018

### Lectures: Day 1 Lectures (Track 1) - St Anne's College, Mary Ogilvie LT (09:00 - 10:30)

-Conveners: Maxim Borisyak

time	[id] title	presenter
09:00	[28] Track 1 Lecture. Overfitting. Model Selection. Figures of Merits. Linear Models. Regularization. Logistic Regression.	BORISYAK, Maxim

### Lectures: Day 1 Lectures (Track 1) - St Anne's College, Mary Ogilvie LT (13:30 - 15:00)

-Conveners: Nikita Kazeev

time	[id] title	presenter
13:30	[30] Track 1 Lecture. Ensembling: Stacking, RandomForest, AdaBoost, Gradient Boosting.	KAZEEV, Nikita

# Tuesday, 7 August 2018

## Lectures: Day 2 Lectures - St Anne's College, Mary Ogilvie LT (09:00 - 10:30)

-Conveners: Alexey Artemov

time	[id] title	presenter
09:00	[10] Lecture. Introduction into Neural Network models. Multi-layered Perceptron. Backpropagation.	ARTEMOV, Alexey

## Lectures: Day 2 Lectures - St Anne's College, Mary Ogilvie LT (13:30 - 15:00)

-Conveners: Alexey Artemov

time	[id] title	presenter
13:30	[33] Lecture. Intro into Deep learning. Convolutional Neural Network.	ARTEMOV, Alexey

# Thursday, 9 August 2018

## Lectures: Day 4 Lectures - St Anne's College, Mary Ogilvie LT (09:00 - 10:30)

-Conveners: Nikita Kazeev

time	[id] title	presenter
09:00	[36] Lecture. Probability density estimation. Variational Autoencoder.	KAZEEV, Nikita

## Lectures: Day 4 Lectures - St Anne's College, Mary Ogilvie LT (13:30 - 15:00)

-Conveners: Nikita Kazeev

time	[id] title	presenter
13:30	[45] Lecture. Generative Adversarial Networks.	KAZEEV, Nikita

# Friday, 10 August 2018

## Lectures: Neural networks for Network structures (MPNN) - St Anne's College, Mary Ogilvie LT (08:30 - 09:00)

-Conveners: **Andrey Ustyuzhanin**

## Lectures: Day 5 Lectures - St Anne's College, Mary Ogilvie LT (09:00 - 10:30)

-Conveners: **Maxim Borisyak**

time	[id] title	presenter
09:00	[54] Lecture. Black-box optimization: Bayesian Optimization, Variational Optimization.	BORISYAK, Maxim

## Lectures: Day 5 Lectures - St Anne's College, Mary Ogilvie LT (13:30 - 15:00)

-Conveners: **Maxim Borisyak**

time	[id] title	presenter
13:30	[38] Lecture. Adversarial Optimization (in general), Adversarial Variational Optimization.	BORISYAK, Maxim

# Saturday, 11 August 2018

## Lectures: Day 6 Lectures - St Anne's College, Mary Ogilvie LT (09:00 - 10:30)

-Conveners: **Andrey Ustyuzhanin**

time	[id] title	presenter
09:00	[40] Lecture. Domain Adaptation (reweighting, flatness, adversarial DA).	USTYUZHANIN, Andrey

## Lectures: Day 6 Lectures - St Anne's College, Mary Ogilvie LT (13:30 - 15:00)

time	[id] title	presenter
13:30	[56] Lecture. RNN: GRU + LSTM + Jet recognition.	