

ECT* TALENT SCHOOL 2021

ONLINE EDITION

Trento, July 19 – 30, 2021

Machine Learning

applied to Nuclear Physics, experiment and theory

Organizers and Lecturers

Daniel Bazin (Michigan State University) | **Morten Hjorth-Jensen** (Michigan State University and University of Oslo)

Michelle Kuchera (Davidson College) | **Sean Liddick** (Michigan State University)

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Student Coordinator and Advisor

Morten Hjorth-Jensen (Michigan State University and University of Oslo)

Topics

Basic concepts of machine learning and data analysis and statistical concepts like expectation values, variance, covariance, correlation functions and errors | Estimation of errors using cross-validation and bootstrapping | Linear Regression and Logistic Regression | Dimensionality reductions, from PCA to clustering | Neural networks and deep learning | Convolutional Neural Networks and classification problems | Recurrent Neural Networks and Autoencoders | Decisions trees, random forests and boosting methods | Support vector machines and kernel transformations | Bayesian Neural Networks

Applications

Applications for the ECT* TALENT School should be made electronically through the ECT* web page. It should include: a curriculum vitae, a 1-page description of academic and scientific achievements, a short letter expressing the applicants' personal motivation for participating in the programme.

In addition, a reference letter from the candidate's supervisor should be sent to Barbara Gazzoli (gazzoli@ectstar.eu) for the attention of Professor Gert Aarts - Director of ECT*.

Registrations available from May 19 to June 30, 2021

For further details see www.ectstar.eu