

Machine Learning for Materials Science

by Dr. Keith Butler

Date: 21 June 2019 (Friday)

Time: 10.00am – 11.00am

Venue: EA-06-05

Abstract

ML, AI, NN and a range of other (often confusing) acronyms are said to be revolutionising daily life and leading to the so-called 'fourth paradigm' of scientific research. In this presentation I will look at some of the machine learning tools that are enabling this new wave of scientific research. I will present a background on some general considerations when starting a machine-learning focussed scientific study. I will then look at some of the important algorithms drawing a distinction between "classical" machine learning methods and deep learning methods. Along the way I will provide illustrative examples of where the different approaches can be useful. This talk will aim to provide a grounding in some core concepts and jargon of machine learning for the interested and enthusiastic outsider.

Speaker

Keith Butler is a staff scientist at Rutherford Appleton Laboratory, UK. His research concerns using computational methods (in particular neural networks) to compliment and analyse experimental data from some of the UK's large scientific facilities. Dr. Butler received a degree in Chemistry from Trinity College Dublin, and a PhD in Computational Chemistry from University College London. He then worked as a postdoc studying the design of new materials for clean energy applications, applying density functional theory and machine learning to identify promising new materials. Dr. Butler is an editorial board member of the Journal of Physics Communications and secretary of the Institute of Physics special interest group on Dielectrics and Electrostatics.

ALL ARE WELCOME!

Host: Dr. Pieremanuele Canepa