COMPUTER SCIENCE
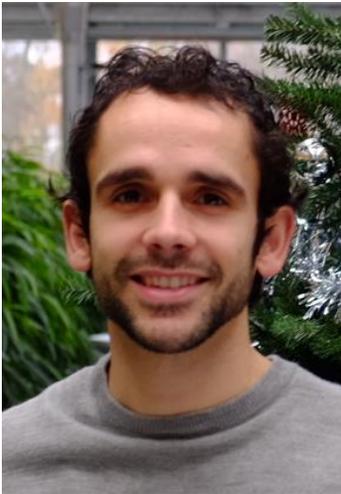# SEMINAR SERIES

Title: **Computational Intelligence in the Big Data Context**

Friday, 3/22/19 | 12pm-1pm | West Hall, W105
Speaker: Isaac Triguero
Affiliation: University of Nottingham, UK

Abstract: Computational Intelligence (CI) commonly refers to a variety of bio-inspired and/or human-like techniques that can be applied in optimisation, learning and modelling problems. Broadly speaking, CI comprises Artificial Neural Networks, Fuzzy Sets and Fuzzy Logic and Evolutionary Computation. In the era of big data, CI in conjunction with data mining techniques are expected to help uncover useful knowledge from big data as they are very well suited for dealing with the intrinsic veracity and variety of big data; however, they are challenged by the volume and velocity of big data which typically limit their application in this context.

In this talk, I will present some examples of the application of CI to big data scenarios, including big data pre-processing, Citizen Science and Real-Time Hot Spots Detection. In particular, I will discuss (1) the use of evolutionary algorithms to reduce the size of big datasets for classification; (2) an approach to handle uncertainty in Citizen Science data with a case study in Galaxy Image classification; and (3) a dynamic bio-inspired approach to detect hot spots in big data streams and its application to identify incidents in the roads caused by heavy goods vehicles as case study.

Bio: Isaac Triguero received his M.Sc. and Ph.D. degrees in Computer Science from the University of Granada, Granada, Spain, in 2009 and 2014, respectively. He is currently an Assistant Professor of Data Science since June 2016. His work is mostly concerned with the research of novel methodologies for big data analytics. Dr Triguero has published more than 60 international publications in the fields of Big Data, Machine Learning and Optimisation (H-index=21 and more than 1600 citations on Google Scholar). He is a Section Editor-in-Chief of the Machine Learning and Knowledge Extraction journal, and an associate editor of the Big Data and Cognitive Computing journal, and the IEEE Access journal. He has acted as Program Co-Chair of the IEEE Conference on Smart Data (2016), the IEEE Conference on Big Data Science and Engineering (2017), and the IEEE International Congress on Big Data (2018). Dr Triguero is currently leading a KTP project funded by Innovative UK and the energy provider E.ON that investigates Smart Metering data.

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