Theoretical aspects of data science

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Abstract

Data Science is an emerging research field consisting of novel methods and approaches to identify actionable knowledge from the continuous creation of data. The applications of this research field to data-driven sciences has led to the discovery of new research directions, with ground-breaking results. In particular, new mathematical theories have contributed to enhanced Data Science frameworks, focusing on the algorithms and mathematical models to identify, extract and assess actionable information. Furthermore, these theoretical approaches have important implications to decision systems based on Big Data, and their application to a variety of multi-disciplinary scenarios, such as Criminology, eHealth and business analysis.

Biography

After having obtained his PhD in Mathematics at the University of Exeter in 2007, specializing in theoretical dynamical systems with singularities, he has worked for R&D organizations as well as academic institutions, including IBM Research where he was involved in a number of research projects. In 2016 Marcello joined the Computer Science Department at Edge Hill University as a senior lecturer and he was recently awarded a Readership in Computer Science. He is involved in several research themes and projects. He is co-leading the STEM Data Research centre and is actively involved in the Productivity and Innovation Lab, aiming to collaborate and support SMEs in Lancashire. Marcello's main interests include: Mathematical Modelling, Data Science, Big Data Analytics, Network Theory, Machine Learning, Data and Text Mining.

Publication

1. Big-Data Analytics and Cloud Computing, Theory, Algorithms and Applications, to appear in the Computer Communications and Networks, Springer, 2016.

2. Guide to Security Assurance for Cloud Computing, to appear in the Computer Communications and Networks, Springer, 2016