

Special Issue

Journal of the Royal Statistical Society - Series A (Statistics in Society)

Title

Data Science for Society: Challenges, Developments and Applications

Call

Data Science is broadly defined as the science of learning from data, and is a discipline that incorporates advances in computing, including computation and data analytics, with statistical theory and inference.

Its expansion is linked to the huge potential for societal benefit from exploiting the increasing availability of data that provide detailed information about how we interact with public services (e.g. health, education, social services), which can be combined with rich data collected in purposely designed cohorts, electronic medical records, genomic, biomarker and imaging studies, and with data from social media, wearables and apps. However, there are a number of challenges in fully realising the potential of these data, including: i) researcher access to data while preserving privacy and maintaining confidentiality, ii) understanding quality and sources of bias in data derived from multiple sources, and iii) handling the complexity and high-dimensionality of large, longitudinal and high velocity data sources. There is a need for evidence on how (and in which settings) data science methods add value to traditional statistical approaches and can be used to translate data into tools that can benefit society.

This special issue of the Journal of the Royal Statistical Society, Series A, is dedicated to finding solutions to these challenges, through innovative methodological developments and applications, bringing together data science and statistics. As usual with Series A, the focus is on the development and/or evaluation of innovative methodology that is directly motivated by, and substantially increases our understanding of, real world data problems in social and medical settings. Motivating examples include studies aiming to use Data Science for the benefit of society, which might involve data engineering (e.g. storage and management of complex and increasingly large and unstructured datasets, meta-data, data linkage, anonymisation and privacy preservation), computational methods (e.g. pattern recognition, machine learning, artificial intelligence), or data visualization. Studies aiming to harness opportunities for involving the public (e.g. through citizen driven science, or agile learning systems where data is embedded in daily practice to produce continual improvements in services), or that address information governance and confidentiality are also welcome.

We particularly encourage interdisciplinary submissions that involve collaboration between statisticians and other data scientists. Prospective authors are invited to email their proposals to the Guest Editors, Dr Pia Hardelid (p.hardelid@ucl.ac.uk) and Prof Peter Christen (peter.christen@anu.edu.au). Please note that, in line with the remit of Series A, contributions of a principally technical nature will not be acceptable. The deadline for manuscript submissions is midnight on 30th November 2019. Submissions—which should clearly indicate JRSS-A Data Science Special Issue in the cover letter—should be made in the usual way, online at <https://mc.manuscriptcentral.com/jrss>, where further guidance about the structure, length and format of manuscripts may be found. All manuscripts will be peer reviewed in line with the journal's standard policy. However, in order to produce the special issue in a timely manner, authors will be asked to complete revisions within eight weeks of receiving referee reports.