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# Advances in Decision Sciences

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**Research Ideas for  
Advances in Decision Sciences (ADS):  
22<sup>nd</sup> Anniversary Special Issue in 2018**

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## **Abstract**

This note is concerned with an editorial statement of intent for *Advances in Decision Sciences* (ADS), which was founded in 1997, so that 2018 marks the 22<sup>nd</sup> Anniversary of the journal. The note discusses the aims and scope of ADS in Section 1, innovative topics in all fields of optimal decision making in Section 2, research areas of interest to ADS in Section 3, invitation to submit papers to ADS in Section 4, editors and members of the editorial board in Section 5, and acknowledgements in Section 6.

**Keywords:** Decision making, aims and scope, innovative topics, optimality, areas and topics of interest.

**JEL:** C44, D81, D91, G11, G41, M51.

## **1. Aims and Scope of Advances in Decision Sciences (ADS)**

**Advances in Decision Sciences (ADS)** was founded in 1997, and has always published innovative and original peer-reviewed research articles, as well as critical review articles, in all areas of decision sciences.

The 22<sup>nd</sup> Anniversary of the inception of ADS will occur in 2018.

Consequently, ADS will publish a 22nd Anniversary special issue, indicated as 22(A), as a single volume in 2018.

Decision Sciences is a multidisciplinary area that is concerned with advancing knowledge and improving instruction in all areas related to decision making and scientific analysis in Business and cognate disciplines, including Economics, Finance, Marketing, Risk Management, Management Science, International Business, Financial Engineering, Engineering, Operations Research, Agriculture, Aquaculture, Tourism Research, Energy Economics, Energy Finance, Econometrics, Financial Econometrics, Psychometrics, Statistics, Informetrics, Informatics, Technometrics, Bibliometrics, Scientometrics, Altmetrics, Applied Mathematics, Physics, Political Science, Environmental Science, and Climate Science.

The scope of *Advances in Decision Sciences (ADS)* is broad, but relies fundamentally on cognate techniques and skills from a range of disciplines that emphasize quantitative methods to achieve optimal decision making outcomes.

ADS focuses on disseminating the latest innovative theoretical and applied research in the analysis of decision science analytics and techniques, as well as their relationships to cognate disciplines across a wide range of areas in the Sciences and Social Sciences.

The intention of ADS is to publish innovative and high quality theoretical and applied papers, including reviews and case studies, on a wide range of topics in the analysis and use of advanced and innovative techniques in the mathematical and computational and sciences that

are directly relevant for academics, researchers, and practitioners alike in optimal decision making.

Advances in the various fields of informatics across a wide range of cognate disciplines are driving a major expansions and innovative developments in all areas of decision science analytics.

Much of the innovative and advanced research on decision sciences has focused on the application of advanced technical and computational science methods for a better understanding of models and their underlying stochastic processes.

ADS seeks academically rigorous papers that will appeal to theoreticians and also have direct relevance to practitioners across a wide range of cognate disciplines in the Sciences and Social Sciences.

Papers that use rigorous mathematical, statistical and computational methods in the empirical testing of theory and models across a wide range of cognate disciplines are strongly encouraged.

In addition, reviews and case studies are invited to encourage portability of the discoveries in empirical research to other studies and disciplines in the Sciences and Social Sciences.

ADS intends to coalesce researchers, academics, scientists, professors, advanced students, practitioners, and other interested individuals an opportunity to be well informed of the latest innovations in the analysis of optimal decision making through developments in all technical and cognate disciplines.

## **2. Innovative Topics in All Fields of Optimal Decision Making**

ADS encompasses a wide spectrum of innovative topics in all fields of optimal decision making and cognate disciplines that include, but are not limited to:

- (i) Optimal Decision Making

- (ii) Big Data Analytics
- (iii) Computational Science
- (iv) Computer Simulations
- (v) Computational Modelling
- (vi) Informatics
- (vii) Informetrics
- (viii) Bioengineering
- (ix) Engineering
- (x) Machine Learning
- (xi) Algorithms
- (xii) Medicine
- (xiii) Medical Research
- (xiv) Bio-medicine
- (xv) Bio-medical Research
- (xvi) Imaging Informatics
- (xvii) Economics
- (xviii) Econometrics
- (xix) Financial Econometrics
- (xx) Psychometrics
- (xxi) Informetrics
- (xxii) Informatics
- (xxiii) Technometrics
- (xxiv) Quantitative Finance
- (xxv) Financial Mathematics
- (xxvi) Financial Statistics
- (xxvii) Finance
- (xxviii) Management
- (xxix) Management Science
- (xxx) Marketing
- (xxxii) Business
- (xxxiii) Accounting Research
- (xxxiv) Quantitative Methods
- (xxxv) Time Series Analysis
- (xxxvi) Cross Section Data Analysis

- (xxxvi) Dynamic Panel Data Models
- (xxxvii) Statistics
- (xxxviii) Applied Mathematics
- (xxxix) Operations Research
- (xl) Physics
- (xli) Political Science
- (xlii) Environmental Science
- (xliii) Climate Science

The intention of ADS is to publish articles that are connected to, but are not limited by, the following:

- (1) Computational Science
- (2) Computer Programming
- (3) Big Data Analytics
- (4) Simulations
- (5) Numerical Analysis
- (6) Theoretical and Applied Mathematics
- (7) Theoretical and Applied Statistics
- (8) Theoretical and Applied Econometrics
- (9) Theoretical and Applied Financial Engineering
- (10) Environmental Science
- (11) Fossil Fuels
- (12) Carbon Emissions
- (13) Environmental science
- (14) Climate Change
- (15) Climate Science
- (16) Global Warming
- (17) Environmental Management
- (18) Financial Decision Making
- (19) Financial Risk Analysis
- (20) Financial Risk Management
- (21) Economics

- (22) Finance
- (23) Business
- (24) Financial Econometrics
- (25) Financial Mathematics
- (26) Financial Statistics
- (27) Financial Engineering
- (28) Forecasting
- (29) Energy Economics
- (30) Energy Finance
- (31) Renewable Energy
- (32) Sustainable Energy
- (33) Green Energy
- (34) Agricultural Commodities
- (35) Management
- (36) Management Science
- (37) Marketing
- (38) Operations Research
- (39) Engineering
- (40) Bioengineering
- (41) Data Mining
- (42) Informatics
- (43) Informetrics
- (44) Simulations
- (45) Imaging and modulations

### **3. Research Areas of Interest to ADS**

A key consideration in reaching optimal decision making is a prescient combination of innovative model specifications, use of novel and interesting data, and the development of advanced mathematical, statistical, econometric and computational and algorithmic techniques. A very topical area for optimal decision making is Big Data.



Big Data can be defined as involving two components, namely Computer Software and Data Analytics, associated with data sets that are so complex that standard computer software for dealing with them are inadequate;

New computer software and hardware facilities are required that include, but are not restricted to, the following:

- (1) increasing the size of memory on computer software;
- (2) faster computers;
- (3) expand the capacity of standard commercial software, such as SAS, SPSS, MATLAB, R, Revolution R Enterprise (RRE), and S language;
- (4) bootstrap methods;
- (5) numerical calculation;
- (6) optimal subsampling algorithms, including alternative time scales estimation.

Novel and advanced techniques data analytics are required for purposes of processing, locating, searching, discovering, capturing, checking, storing, updating, protecting, retrieving, sending, sharing, transferring, receiving, extracting, estimating, modelling, evaluating, and predicting data.

New model specifications are required that include, but are not restricted to, the following:

- (1) continuous time series models for dynamic time series nano data;
- (2) continuous space models for cross section nano data;
- (3) continuous time series and continuous space models for dynamic time series cross-section nano panel data models;
- (4) continuous time Cox proportional hazard models;
- (5) Bayesian spatio-temporal geostatistical models;
- (6) optimal subsampling models, including alternative time scales estimation.

Some research areas of significant academic, theoretical, practical and public policy interest that are of substantial interest to ADS include, but are to restricted to, the following:

- (1) Data information can be collected in many different ways, including panel data, cross section data, time series data, numerical data, simulated data, bootstrap data, and data collected from case studies. This naturally leads to analytical and technical considerations of optimal decision making in a wide range of cognate disciplines in the Sciences and Social Sciences.
- (2) As discussed above, optimal decision making associated with Big Data can be defined as involving two components, the first of which is Computer Software. Data sets can be so complex that standard computer software for dealing with them are inadequate. Consequently, new computer software and hardware facilities, such as increasing the size of memory on computer software, faster computers, expanding the capacity of standard commercial software, bootstrap methods, numerical calculation, and optimal subsampling algorithms, among others, need to be developed.
- (3) The second component in the analysis of Big Data is the use of Data Analytics that require novel and advanced computational, mathematical, statistical and econometric techniques for purposes of processing, locating, searching, discovering, capturing, checking, storing, updating, protecting, retrieving, sending, sharing, transferring, receiving, extracting, estimating, modelling, evaluating, and predicting Big Data.
- (4) The application of innovative and technical developments in mathematics, statistics, and econometrics, combined with novel developments in computer software and data analytics, are especially important for analysing and testing theoretical models and approaches in numerous disciplines in the Sciences and Social Sciences.
- (5) Data that arise from panels, cross sections, time series, numerical analysis, simulations, bootstraps, and empirical case studies need to be understood. Big data issues arising from such data sources, especially countably finite but exhaustive data sets that can be downloaded from the internet include, but are restricted to, the following: searched, discovered, located, captured, processed, checked, stored, updated, protected, retrieved, distributed, shared, transferred, received, extracted, analysed, estimated, modelled, evaluated, and predicted.

## **4. Invitation to Submit Papers to ADS**

ADS invites authors to submit manuscripts to be considered for inclusion in a 21<sup>st</sup> Anniversary special issue of the journal, as well as in future standard issues.

As can be seen from the suggestions given above, there are numerous possible research topics that arise from disciplines associated with optimal decision making and numerous cognate disciplines, that can be applied to analyse important and critical issues related to the topical issues that are intended to be published in the journal.

The journal is confident that academics, researchers, advanced graduate students, practitioners and policy makers can create, develop, establish and use many more exciting research topics that use a wide range of possible data options to estimate and test academic and intellectual theories, and evaluate and review empirical regularities and practical case studies in optimal decision making and cognate fields in the Sciences and Social Sciences.

The editorial staff at ADS hopes that these and other important areas of research in optimal decision making and cognate disciplines, will attract interesting, high quality, innovative and challenging submissions.

For further information about submitting a manuscript for possible publication, please contact the Editors.

## **5. Editors and Members of the Editorial Board**

ADS has distinguished Editors and Editorial Board, comprising leading academics from leading international institutions.

The Editorial Board of ADS exercises control over the editorial content of the journal, which is intended to be published on a quarterly basis.

ADS seeks to expand membership of the Editorial Board, and welcomes a wide range of members of the Editorial Board and editorial reviewing panels.

For further information about joining the Editorial Board and Editorial Reviewing Panels, please contact the Editors.

The journal's mission is to expand the horizon of the academic disciplines comprising Decision Sciences through a broad dissemination of innovations and knowledge sharing to expand understanding of these issues in cognate disciplines in the Sciences and Social Sciences.

## **6. Acknowledgments**

It is a genuine challenge, and an honour and pleasure, for the Editor-in-Chief and Co-Editors-in-Chief to have been appointed to *Advances in Decision Sciences* (ADS).

The Editors look forward to working with the active and vibrant members of the Editorial Board, extensive reviewing panels, and contributors to make ADS an accessible and leading outlet for high quality academic, theoretical, and practical research in all areas of decision sciences, and their relationships to cognate disciplines in the Sciences and Social Sciences.

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