Artificial Intelligence for Engineering Design, Analysis and Manufacturing (2011), *25*, 209–210.
© Cambridge University Press 2011 0890-0604/11 $25.00
doi:10.1017/S089006041000065X

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AI EDAM Special Issue, May 2013, Vol. 26, No. 4
Intelligent Decision Support and Modeling

Guest Editors: Andy Dong & Julie Jupp

Understanding how decisions are made in risky situations with incomplete, imperfect, and uncertain information continues to be a critical interdisciplinary research question that has far-reaching implications in fields ranging from engineering to economics to public policy. In situations where multiple alternatives to a particular problem exist, each with uncertain variables and payoffs that must be analyzed and decided upon, the aim is to improve decision making so that goals can be attained while minimizing undesirable, unintended consequences.

Concurrent with the problem of decision making is forecasting the effects of decisions. Both of these matters are complicated by the realities of collective decision making of increasing scale and complexity that is typical of highly complex engineering design problems. Decision-making research is also progressively turning to the problem of the complex interplay of stakeholders, each with differing authority and information on which to make decisions and who have competing beliefs and incentives. All of these facets of decision make this an exciting area of research.

In order to tackle these matters, research methods in decision making now range from formal, mathematical modeling to statistical mechanics based models to agent-based modeling and simulation to empirical, behavioral research. Research in this area is reaching beyond normative models of decision making to examine cognitive (e.g., frames), emotional (e.g., beliefs), and social factors (e.g., herding) that influence decision making.

This Special Issue is aimed at disseminating the state-of-the-art research and applications, addressing the major challenges and issues of decision modeling, and developing and applying intelligent decision support systems. The Guest Editors invite authors to submit original papers to this Special Issue. We are also interested in authoritative reviews of the state of the art and directions for future research in the area.

The Special Issue will cover, but is not limited to, the following topics:

- Decision support systems and decision process modeling
- Empirical studies in decision making including handling risk, uncertainty, and imperfect information in individual, small group, and collective decision making
- Decision analysis including new computational methods for analyzing large-scale decision networks
- Decision theories, including game theory, utility theory, probability theory, fuzzy set theory, Bayesian theory, among others
- Approaches to decision-based design

All submissions will be anonymously reviewed by at least three reviewers. The selection for publication will be made on the basis of these reviews. High-quality papers not selected for this Special Issue may be considered for standard publication in *AI EDAM*.

Information about the format and style required for *AI EDAM* papers can be found at www.cs.wpi.edu/~aiedam/Instructions/

Note that all inquiries and submissions for Special Issues go to the Guest Editors, **not** to the Editor in Chief.

Important Dates

Intent to submit (Title and Abstract):	As soon as possible
Submission deadline for full papers:	15 September 2011
Reviews due:	15 December 2011
Notification and reviews to authors:	15 January 2012
Revised version submission deadline:	1 April 2012

https://doi.org/10.1017/S089006041000065X Published online by Cambridge University Press

Guest Editors

Andy Dong
Faculty of Architecture, Design and Planning
Room 275, G04 Wilkinson
University of Sydney
Sydney, NSW 2006, Australia
E-mail: andy.dong@sydney.edu.au

Julie Jupp
School of the Built Environment
702–730 Harris Street
University of Technology, Sydney
Ultimo, NSW 2007, Australia
E-mail: julie.jupp@uts.edu.au

https://doi.org/10.1017/S089006041000065X Published online by Cambridge University Press