Key Management and Governance Challenges when Executing Data Science / Analytics Projects

Panel

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ABSTRACT

Big data, data science and analytics have become increasingly important strategic assets because they can help organizations make better decisions, discover new insights, competitively differentiate, and they enable the embedding of intelligence into automated processes so organizations can efficiently respond at the speed of business. Effective organizational management and governance of data science practices are necessary in order to mitigate risks associated with analytics deployment. For example, organizations need to capture and manage critical meta-information detailing modeling and environmental assumptions underlying the analytics solutions, they also need to establish policies and a culture designed to ensure adherence to the highest ethical standards of data management and predictive model deployment. At a higher level, unleashing machine learning algorithms may require safeguards and risk mitigation monitoring to address these types of socio-technical challenges. This panel will foster a debate with respect to what are the most important concerns or potential issues that an organization should focus on while executing a data science/analytics project. Via a debate, the panel, along with the audience, will explore the field of data science and predictive analytics, and what are the key project risks that need to be mitigated.

Keywords
Data Science, Big Data, Data Analytics. Governance, Compliance, Risk Management

OBJECTIVES

Organizational roles like Chief Data Officer and Chief Analytics Officer are emerging, in part to leverage big data, data science and advanced analytics. However, there has been minimal discussion on the key challenges these roles should focus on while their teams execute data projects (Saltz & Grady, 2017). In addition, new agile methodologies are emerging, and building an organization-wide culture of evidence-based management is becoming a competitive necessity. However, how an organization can support agile methodologies while executing these data projects is also an area not fully understood (Saltz & Shamshurin, 2016). One can see the growing importance of these topics in situations such as the Facebook situation now in the news, which relates to data ownership, sharing and overall governance issues in that Facebook shared data through contracts but couldn't monitor and safeguard data usage/persistence as agreed to in those contracts, and now they are culpable since a bad actor parlayed the data to do data science that doesn't meet ethical standards.

In short, effective organizational management and governance of data analytic practices are necessary in order to mitigate risks associated with analytics deployment (Sandvig et al, 2014). Hence, the goal of this panel is to foster a debate with respect to what are the most important questions and challenges for organization executing data analytic practices. Specifically, the focus of this panel not on which specific algorithms a team should use or how an organization can leverage predictive analytics, but rather, how to ensure an effective and efficient data science team. By doing this, we hope to explore some of the key responsibilities for Chief Data Officers and Chief Analytics Officers. Some of these socio-technical questions to be explored include:
What is an appropriate analytics workflow and model life-cycle management process?
What are the analytics regulatory risks and associated risk mitigations (including model compliance)?
How to ensure ethical data analytics?
What is data and model transparency; why is it important and how does one achieve this transparency?
How should the different teams (IT, analytic and business) coordinate their efforts?
When is data and model ownership important and how should an organization ensure data and model ownership?
How to ensure data and model ownership and when is it important to have data and model ownership?

APPROACH

These questions will be discussed via a debate, where the panelists will discuss the areas that each panelist believes are the most pressing, with the audience also invited to participate in the discussion. Specifically, each panelist will be challenged with the question of what's new in this area and why, we in academia need to do to address these items. In addition, questions with respect to prioritization of what should be researched first and what can be done in parallel, will also be discussed. This, collectively, will help generate future research agendas.

The debate will be divided into roughly two segments. During the first segment, panelists and the audience will brainstorm and outline some of the many potential challenges. During the second segment, panelists, along with the audience, will try to prioritize these challenges. While the panelists will typically provide some initial points of view, members in the audience will be encouraged to join the discussion as equal participants.

The panel will not have any formal presentations, but a laptop will be used to highlight key areas of agreement (or disagreement), that will be used as a start to an article summarizing the thoughts that emerge from this panel debate / discussion.

IMPORTANCE OF PANEL

AMCIS is the premier conference of informational systems researchers and educators in the Americas. The theme of this year’s conference is digital disruption, and the emerging field of data science is certainly a field that fosters innovation and digital disruption. As such, many of the attendees will be interested in better understanding data science/analytics, and the important socio-technical research questions that will be prioritized during this panel discussion.

The target audience for this panel are researchers focusing on data science / analytics, who will benefit from this panel by gaining a better understanding of current challenges when executing data science / analytics projects. Other researchers will also find this panel of interest, in that attendees of this panel will be able to better appreciate how the trends in data science/analytics might impact the broader field of information systems and management research.

PANELISTS

Jeffrey S. Saltz
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Jeff Saltz is an Associate Professor at the School of Information Studies, Syracuse University and directs their Applied Data Science graduate program. He teaches data science to both graduate and undergraduate students and is the co-author of An Introduction to Data Science (Sage Publications), which is a new data science textbook. Jeff helped create and currently leads the university’s Applied Data Science graduate program. He was also part of a different team that defined the university’s Business Analytics graduate degree. His current research focuses on the socio-technical challenges of data science projects, such as how to coordinate and manage data science teams. Prior to joining Syracuse University in 2014, Jeff spent 20+ years in industry leveraging emerging technologies and data analytics to deliver innovative business solutions.

Michael Goul
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Michael Goul is Associate Dean for Faculty and Research and a Professor at the W. P. Carey School of Business at Arizona State University. Michael oversees faculty and department affairs and leads initiatives to advance faculty excellence. In addition, he oversees the School’s portfolio of research centers, coordinates the School’s Ph.D. Program, and he represents the School on University research initiatives such as those associated with advanced analytics. For the six years prior, he served as chair of the school’s department of information systems. As chair, Goul spearheaded the development of the nine-month Master of Science in Business Analytics program, and he administered the launch of the School’s undergraduate Bachelor of Science in Business Data Analytics degree. Michael also administered the launch of the online version of Carey’s highly successful Master’s of Science in Information Management program. Goul is passionate about how the concomitant explosion of big data, the shift to cloud computing and the emergence of the mobile/social web does and will impact the global economy. His most recent research efforts are in the area of big data and data science governance, fog computing and analytics contracts. In summer 2016, Goul was recognized with the Outstanding Leadership Award by the IEEE Computer Society Technical Committee on Services Computing. He has published over one hundred articles, authored cases and he conducted analytics research at companies including American Express, eBay, Intel and Teradata.

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Dr. Armour is an assistant professor of information technology at the Kogod School of Business, American University and is the faculty program director for the MS in Analytics degree program. He received his PhD from the Volgenau School of Engineering at George Mason University. He is also an independent senior IT consultant and has over 25 years of extensive experience in both the practical and academic aspects applying advanced information technology. He has led initiatives on, and performed research in: Business analytics, Big Data, Enterprise architectures, business and requirements analysis, Agile System Development Cycle Development (SDLC) and object-oriented development. He is the coauthor of the books, Advanced Use Case Modeling (Addison Wesley) and Obtaining Value from Big Data for Service Delivery (Business Expert Press). He is the author or coauthor of over 30 papers in the Information Technology discipline. He is a co-chair of a big data analytics minitrack at the HICSS Conference and he is primary co-chair for the enterprise architecture minitracks at both the HICSS and AMCIS conferences.

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Dr. Ramesh Sharda is the Vice Dean for Research and Graduate Programs, Watson/Conoco-Phillips Chair and a Regents Professor of Management Science and Information Systems in the Spears School of Business at Oklahoma State University. He has coauthored two textbooks (Business Intelligence and Analytics: Systems for Decision Support, 10th edition, Prentice Hall and Business Intelligence: A Managerial Perspective on Analytics, 3rd Edition, Prentice Hall). His research has been published in major journals in management science and information systems including Management Science, Operations Research, Information Systems Research, Decision Support Systems, Decision Science Journal, EJIS, JMIS, Interfaces, INFORMS Journal on Computing, and many others. He is a member of the editorial boards of journals such as the Decision Support Systems, Decision Sciences, and Information Systems Frontiers. He is currently serving as the Executive Director of Teradata University Network and received the 2013 INFORMS HG Computing Society Lifetime Service Award.
REFERENCES