Advances in Trust Research: Artificial Intelligence in Organizations Mini track

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Abstract

Within the Conference on System Sciences (HICSS), we organize for the fifth time a mini track on 'Advances in Trust Research', this year addressing 'Artificial Intelligence in Organizations'. Through the presentation of four papers and an open discussion, the mini-track participants will debate trust and AI in contexts such as AI-mediated work relations, anthropomorphism of AI chatbot, and AI enabled CRM in e-commerce.

1. Introduction

Recent advances in digital technologies lead to the rise of artificial intelligence (AI), or intelligent systems, which are increasingly being adapted by organizations. Such intelligent systems solve complex cognitive problems commonly associated with human activities including decision making, learning, and pattern recognition. AI enables the analysis of large amounts of data and promises to automate complex tasks – even those that have previously been conducted by humans. Examples include smart wearables, AI-powered work surveillance tools, personal voice assistants, autonomous vehicles, the automatic filtering of social media content, and chatbots.

AI presents a challenge to trust research, which in the past, has been dominated by the conceptual and empirical assessment of interpersonal and organisational trust, as well as trust in non-intelligent technologies. To this end, research at the intersection between trust and AI is still in its infancy. Thus, we identify need to theoretically and empirically advance our understanding of trust and AI. In this mini-track, we focus on addressing the cross-section of the two topic areas (1) trust research and (2) artificial intelligence in organizations.

Some of the emerging questions discussed and debated in the mini-track include the following:

How do new advancements in AI change the way we trust, and trust-related processes in organizations? What forms will trust take in the context of intelligent systems being implemented by organizations? How do decision makers interpret and build trust in AI applications? When and how do trust in AI, trust in organizations, trust in humans, and trust in technology augment or substitute each other? How can we conceptualize and measure trust in AI? What shapes trust in AI and its consequences for organizations? What are the various risks and vulnerabilities to trust imposed by the emerging algorithmic capabilities, cloud-based platforms, complex platform infrastructures, and highly distributed peer-to-peer systems?

2. Mini track Papers

Three papers are being presented in the mini track. The first paper by Steven Lockey, Nicole Gillespie, Daniel Holm, and Ida Asadi Someh is entitled 'A Systematic Review of Trust in Artificial Intelligence: What Do We Know and Why Is It Important?' The authors conducted a systematic review of the empirical and conceptual literature on the nature, antecedents and consequences of trust in AI. They find that major focus areas of prior research include how trust predicts intentions to adopt AI, how trust is related to transparency, explainability, reliability, and anthropomorphism of AI, and how context factors (technology, environment and user characteristics) may shape perceptions about trust and AI.

The second paper by Naim Zierau, Korbinian Flock, Andreas Janson, Matthias Söllner, and Jan Leimeister is entitled 'The Influence of AI-Based Chatbots and Their Design on Users' Trust and Information Sharing

in *Online Loan Applications*'. This paper explores how conversational interaction and the usage of anthropomorphic design elements of AI chatbots influence user trust beliefs by conducting an online experiment. One of the major findings is that both treatment conditions affect trust in the interface and the provider by increasing perceptions of social presence.

Third, the paper co-authored by Simon Schafheitle, Antoinette Weibel, and Alice Rickert is entitled *'The Bermuda Triangle of Leadership in the AI Era? Emerging Trust Implications From "Two-Leader-Situations" in the Eyes of Employees'*. The authors explore how AI and machine learning algorithms are impacting trust in leader-employee relationships, and particularly how algorithms change the nature of leadership. The authors find that employees often find themselves in a "two-leader-situation" resulting friction in particular in cases when decisions of human leaders and algorithms are conflicting, and employees feel unheard.

3. Discussion of Research Advances

The mini-track papers present a good reflection of recent advances in trust research addressing AI in organizations. By addressing AI mediated work relationships and chatbot enabled customer relationship interactions they succeed in illustrating that trust research is not only relevant to a wide range of AI applications but has an important role in our understanding of AI implementation and adoption by employees and customers.

All papers presented in the mini-track stress the need to rethink trust in the context of AI, as insights from previous research on non-intelligent technologies do not sufficiently equip us with insights about new technological advances. To this end, the authors point out that the trustors, trustees, and mechanisms that shape trust beliefs in the context of AI may be different from non-intelligent technology context – as do its individual, organizational, and socio-technical implications.

To this end, the structured literature review by *Steven Lockey, Nicole Gillespie, Daniel Holm, and Ida Asadi Someh* explains that the emerging research stream provokes interest in topics that are rather salient in non-AI trust research. These include AI anthropomorphism, as well as AI ethics and the fairness of algorithmic decision making, as well as topics such as AI explainability and reliability.

Speaking to these findings, the paper by *Naim Zierau, Korbinian Flock, Andreas Janson, Matthias Söllner, and Jan Leimeister* addresses the important topic of AI anthropomorphism. The authors point out that chatbots tend to comprise anthropomorphic design elements which are visual, verbal and auditory characteristics that contribute to the humanlike appearance of agents.

Furthermore, work presented in the mini track illustrates novel trust challenges that arise in the context of AI. To this end, *Simon Schafheitle, Antoinette Weibel, and Alice Rickert* find that algorithms and automated leadership functions alter the trust dynamics between employees and their human leaders. Their findings speak to one of the major debates in AI related trust research; that is, under what conditions and to what degree decision makers, managers, and employees trust AI and when they trust human knowledge.

While the papers of the mini-track cover key topics illustrating major debates in the emergent research stream on trust and AI in organizations, we identify several topics that the future debate of trust research in information systems management should address.

First, we encourage future work to address when human-like AI systems exacerbate rather than compensate weaknesses common in trust assessments made in contemporary organizations. Future work should focus on what kind of challenges and opportunities are involved in augmented intelligence or automated decision-making from an organizational perspective. [1,2,3]

Second, AI development and adoption requires interdisciplinary and cross-border collaboration among analytics experts, software developers, business and users. Given that AI allows for the implementation of more sophisticated business analytics, we call for research on the role of trust in the development and implementation of the algorithmic cycle in organizations, e.g., functions, openness of coding, data collection and implementation of new services. In line with increased diffusion of AI in organizations we recommend researchers focus on rich data gained from ethnographic field research and longitudinal studies.

Third, we note that complex machine learning algorithms are subject to constant changes and generativity. Time may also play a different role of different types of AI applications, perceived risk and trust [4]. The increasing complexity is hardly understood by data scientists, let alone by managers or

customers. We encourage future research to address how organizations can manage bias and maintain stakeholder trust in AI-enabled decision-making and how they can increase trust in opaque black-boxed AI algorithms.

Fourth, when AI serves as a team member [5] [6], the role of emotional trust is increasingly important [4] [7]. Balasubramanian and colleagues [9] note that AI algorithms cannot easily process emotions as such algorithms are designed with formal rationality in mind. We recommend that IS researchers study different human trust dimensions (i.e. ability, benevolence, integrity) and different technology trust dimensions (i.e., reliability, functionality, and helpfulness) [10] across tasks and related knowledge processes in human-AI relations. Advancement of AI towards deep learning creates also ethical concerns, the role of which is accentuated in remote work mediated communication context.

Finally, we are pleased that the papers in this mini track come from different disciplines. Due to complexity of the fast-developing AI, and its implementation in organizations, there is an urgent need for interdisciplinary dialogue and research collaboration for a rich and multiplex understanding of the possibilities and challenges related to studying and applying AI. Building strong research designs and measures benefits greatly from collaboration across disciplinary fields as well as collaboration between researchers and practitioners.

We hope that our mini track can provide a good venue for discussion on the papers as well as further research opportunities of the increasingly important topic of the relationship of trust and AI in organizations.

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