DOCTOR OF PHILOSOPHY IN MANAGEMENT

ESSAYS ON THE AGENCY OF AI: THEORY, METHOD, AND ETHICAL IMPLICATIONS

By

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I dedicate this to my daughter.

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Abstract

With increasing computing power and technologies such as big data, the capabilities of AI are becoming superior. AI can now make autonomous decisions in critical areas such as cancer detection. While some hail the superior capabilities of AI and are optimistic about its ability to enhance the living conditions of humans, others do not share the same view. The discourse on the impact of AI is highly polarized and lacks a clear understanding of the dynamics of the interaction between humans and AI. As a consequence, the design of human-AI assemblages could be less efficient.

The IS discipline is well positioned to address these issues with its long tradition of understanding the socio-technical interactions of humans and technology. An essential part of the discipline is to understand the dynamic interactions of the agencies of humans and information systems. The IS discipline has investigated the material agency, i.e., the ability of technology to act, and its influence on human agency. However, there are shortcomings in the current paradigms of agency discussed in the IS discipline. They either treat the agency of humans and technology symmetrically or privilege humans. Neither of these stances lends itself to the study of AI's autonomous decision-making capability. The notion of agency has to be extended to accommodate the fact that, unlike traditional information systems, AI can act on its own with minimal human intervention, but it is different from the agency of humans. This autonomous decision-making ability of AI motivated this dissertation and therefore, the overarching research question of the thesis is "how is the agency of AI different from humans and information systems? What are the implications thereof for the human agency?"

The first essay introduces the notion of degrees and dimensions of agency to help understand the differences and similarities in the agency of humans, traditional information systems, and AI. And the third essay provides insights into the implication of these differences for human agency through a qualitative field study of human-AI interactions conducted in a healthcare setting. As part of the empirical research, it was also required to devise a methodology to calibrate the degree of agency. Hence, the thesis proposes a method to calibrate the degree of agency from unstructured qualitative data. The thesis makes the following contribution to the IS discipline –

1. It reconceptualizes agency
2. It provides a methodology to calibrate the degree of a concept, such as agency, that emerges from unstructured qualitative data
3. It provides insights into the ethical impact of AI's agency on human agency and the implications for designing human-AI assemblages.