



Call for Papers, Issue 1/2021

AI-Based Information Systems

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1 Special Issue

Artificial Intelligence (AI), and in particular algorithms for machine learning, are on their way to become a key technology for the digital transformation. US economist Erik Brynjolfsson of the Massachusetts Institute of Technology even describes AI as the most important general-purpose technology of our time (Brynjolfsson and McAfee 2017). The innumerable possibilities of using AI in everyday and corporate life seem to prove him right since algorithms usually perform various tasks outstandingly: they analyze diseases on the basis of CT/MRT images, predict stock prices, recognize faces, or help prevent cyberattacks.

From an organizational perspective, AI will largely impact and change the future of work: many routine jobs are likely to be taken over by AI. In many other areas, employees are expected to work even more closely with algorithms. The analysis of arising effects on the labor market is extremely complex and cannot be predicted reliably thus far: psychological, ethical, and cultural aspects of human–machine interaction will pose new

challenges for decision-making and may lead to unintended consequences of AI implementation and use.

In addition to affecting the division of labor between humans and machines, AI also changes their interaction with each other. Speech recognition, natural language processing, and computer vision allow anthropomorphic systems to create human-like use experiences. However, little is still known about the appropriateness of anthropomorphic system appearances for different tasks and contexts.

According to former DARPA project director John Launchbury (Launchbury 2018), we are currently experiencing the so-called “Second Wave of Artificial Intelligence” which is defined by statistical learning and mainly capable of categorizing decisions while neglecting the explanation of how and why provided decisions were derived – often coined by the term “black box”. Until the “Third Wave of AI” is achieved, i.e., until “AI systems can acquire human-like communication and reasoning capabilities, with the ability to recognize new situations and adapt to them”, the use of AI algorithms leads to a variety of challenges. Currently applied algorithms which show “black box” characteristics may be unproblematic in some cases, but cause concern and calls for modification in many others. In some organizations, for example, AI solutions for personnel selection are already in use. However, if the algorithm works according to the black box principle, the selection decision cannot be explained. It is thus impossible to discern whether the algorithm included parameters such as gender, skin color, or religion in its decision which raises a plethora of possible ethical issues with societal impacts.

Another important aspect on an individual, social, and organizational level is the issue of privacy: AI algorithms are relatively good at linking data and individuals. This can

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lead to an unseen invasion of people's privacy and, for example, exploitation of their behavioral and purchasing patterns through dynamic pricing. However, the combination can also be of high value, for example in medical research, or for the creation of new data-driven business models.

Therefore, the use of AI raises the need for applications that are capable of balancing both the value that AI-based systems may create and the pitfalls that may be introduced with its use. Against this background, the topic of Artificial Intelligence will be addressed in this special issue.

This special issue welcomes a diversity of submissions and is hence open for conceptual, empirical, and/or theoretical research focusing on artificial intelligence. Manuscripts may employ qualitative, quantitative, or mixed methods and innovative research designs that allow for rigor and relevance.

Potential contributions may focus on research questions, such as:

- How do individuals and societies react to intelligent machines which outperform their human counterparts? For instance, what is the impact on HR management and educational institutions?
- How do emerging technologies affect labor markets and jurisdictions? Should new regulations be introduced?
- What are AI's possible effects on organizational governance and hierarchy, structure, and processes? Are current managerial models, strategy development, and quality management techniques still applicable?
- The dark side of AI: Which behavioral, ethical, and societal issues are bound to arise from increased AI use and how can these be countered?

Thus, topics may include, but are not limited to, the following areas:

- AI and the future of work
- The impact of AI on economy and society
- Applications of AI and use cases
- AI innovations and adoption
- Acceptance of AI
- AI-based business models
- Data-driven business models
- AI and privacy
- Human-AI-collaboration
- AI-based assistance systems, e.g. chatbots
- Development, design, and implementation of AI-based systems
- Human–robot interactions
- Trust in automation and AI
- Explainability and transparency of AI-based systems
- Business implications of AI

- AI-based data analytics and decision making
- AI-based methods in IS research
- Pitfalls of AI-based systems: discrimination and aversion arising from existing data bias
- Human beliefs and responses to AI-based systems
- Socio-technical aspects of AI-based systems and use

2 Submission Guidelines

Please submit papers by 1 March 2020 at the latest via the journal's online submission system (<http://www.editorialmanager.com/buis/>). Please observe the instructions regarding the format and size of contributions to Business & Information Systems Engineering (BISE). Papers should adhere to the submission general BISE author guidelines (http://www.bise-journal.com/author_guidelines).

All papers will be reviewed anonymously (double-blind process) by at least two referees with regard to relevance, originality, and research quality. In addition to the editors of the journal, including those of this special focus, distinguished international professionals with scientific and practical backgrounds will be involved in the review process.

3 Schedule

Paper submission due:	1 March 2020
Notification of authors:	4 May 2020
Revision due:	1 July 2020
Notification of authors:	16 August 2020
Completion of a second revision (if needed):	21 September 2020
Anticipated publication date:	February 2021

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