Call for Papers – Management Science
Special Issue on The Human-Algorithm Connection

Co-Editors
Felipe Caro (Operations Management), *University of California, Los Angeles*
Jean-Edouard Colliard (Finance), *HEC Paris*
Elena Katok (Operations Management and Behavioral), *University of Texas at Dallas*
Axel Ockenfels (Market Design), *University of Cologne*
Nicolas Stier-Moses (Big Data Analytics), *Facebook, Inc.*
Catherine Tucker (Marketing), *Massachusetts Institute of Technology*
D. J. Wu (IS), *Georgia Institute of Technology*

Call for Papers

We invite submissions to a special issue in Management Science on the human-algorithm connection.

Algorithms have become ubiquitous. They permeate all kinds of daily activities and shape up production processes and the provision of services. The advent of big data and the widespread adoption of machine learning and analytics overall has catapulted the presence of algorithms to new levels. Innovative business models have been built around algorithms and novel use cases have emerged that were unthinkable not long ago. There are no signs of this trend reverting. Quite the opposite. Most likely the preponderance and reliance on algorithms is posed to accelerate in the upcoming years.

For all their importance, the use of algorithms creates a new set of challenges, in great part because they do not exist in a vacuum. Algorithms are developed and controlled by humans, and the output of algorithms directly and indirectly affects humans' decisions and actions. Moreover, algorithms are created within organizations with a purpose that should align with an organization's mission and strategy. Finally, at an aggregate level, algorithms can have an impact on society as a whole.

The special issue on the human-algorithm connection seeks to attract research that gives decision-makers a better understanding of the coexistence of humans with algorithms and how to improve it. The work must have an important human component (i.e., purely focusing on algorithms won't suffice) and algorithms can be understood in a broad sense including machines and apps. Top quality papers in any of the research areas represented by Management Science are welcome, both

theoretical and empirical. Interdisciplinary studies are also highly encouraged. Possible topics include the following:

- Algorithm aversion: How to increase the adoption and adherence to analytics embedded in decision support systems?
- Algorithmic fairness, bias, discrimination and amplification: How algorithms, data, experiments and human interactions can mitigate or contribute to these issues.
- Algorithm transparency: The trade-off between optimality and interpretability (the black box issue).
- Customer satisfaction in machine-driven communication (e.g., chatbots) and services (e.g., autonomous last-mile delivery).
- Data privacy: How data privacy considerations influence the design of algorithms, its inputs, and measurement of bias.
- Human-in-the-loop: Should humans be allowed to override model-based recommendations (i.e., what is the right degree of automation)?
- Interplay between managerial insights and algorithms: Methods that combine human judgement with algorithms.
- Strategic reaction of humans to algorithms, e.g., "gaming" of an algorithm.
- Algorithms and market design: the impact of algorithms on how markets and institutions are designed.

These topics span a wide range of application domains. A non-comprehensive list of domains that are relevant to the special issue is given below. We reiterate that the domain in itself is not enough to be considered for the special issue. Put simply, just using machine learning will not make the cut. There must be a human connection!

- Algorithms and social good: The interplay between algorithmic solutions and real-world issues for improving equity, access, and social welfare.
- Foundation models, which are general purpose models trained on broad data at scale such that they can be adapted to a wide range of downstream tasks.
- Algorithms economy: Business and societal implications of buying and selling algorithms.
- Algorithm-driven digital platforms (e.g., design delivery algorithm to protect labor rights of delivery drivers).
- FinTech (lending, robo-advisors, etc.).
- Human-algorithm interactions on marketplaces (e.g., trading algorithms, pricing algorithms, auctions).
- Media and communications.
- Labor markets and the implications for the "future of work."
- Data-driven decision making in retail and revenue management.

Submission Instructions

Submissions must follow the Management Science guidelines. Both regular-length and fast-track submissions are welcome (see the Management Science website for special instructions on fast-track submissions). When submitting a paper, authors must select one of the special issue co-editors from the list above. Accepted papers will be published online as soon as available, but the in-print version, including fast-track papers, will have to wait until all other accepted papers are ready. The editors will strive to process the papers efficiently, and aim for no more than two rounds of revisions. Papers that have potential but might require several major revisions to converge will be diverted to the regular journal submissions. Similarly, authors of top quality papers not selected for the special issue for lack of fit will be given the option to resubmit their paper as a regular submission.

Submission Deadline

September 9, 2022.