

## Topics:

- Artificial Intelligence is Disruptive
- Social Impacts
- The Digital Economy
- Values and Bias

# The Social Impact of Artificial Intelligence

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*Our vision is that computer scientists can and should play a key role in helping address societal and environmental challenges in pursuit of a sustainable future, while also advancing computer science as a discipline.*

[Gomes, 2019]

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- Can rights to privacy, fair treatment, accountability and trustworthy systems be guaranteed?

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- This **atoms-to-bits** transformation allows transactions with less friction and more speed.
- Streaming music easier, quicker, cheaper, and more material and energy efficient than what used to happen: going to a store to buy a record or CD.

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- Digital revolution eliminates many intermediaries between the producers and consumers of goods and services.
- People (and jobs) such as retail clerks, bank tellers, and travel agents become redundant - the process of **disintermediation**.

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- Zuboff [2019] characterized the new economy as **surveillance capitalism**, epitomized by the large-scale harvesting of personal data online to facilitate targeted monitoring and advertising for commercial and political purposes.

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- Attention is a psychological **and** an economic issue.
- Herb Simon created the key concept of the **attention economy**.

*In an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.*

[Simon, 1971]

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- Corporations, and other actors, know a lot about us, using that knowledge to manipulate our attention, our thoughts, and our actions.

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- Notice two different meanings of **bias**.
- In machine learning, **bias** has a neutral technical meaning, “the tendency to prefer one hypothesis over another”.
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- In machine learning, **bias** has a neutral technical meaning, “the tendency to prefer one hypothesis over another”.
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- In ordinary language use, human **bias** has a negative connotation, meaning “prejudice in favor of or against one thing, person, or group compared with another”.

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- **Large language models**, pre-trained on vast text corpora, when prompted often produce new text that is racist, sexist, or otherwise demeaning of human dignity.
- An AI-based decision system, or a generative AI system, inherently reflects certain implicit values, or preferences.

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- Given a database + facial detection + facial verification → facial identification. A false-positive rate of 1 in 10 million results in 800 people on earth who match a particular face.
- When facial identification makes mistakes, they usually do not affect all groups equally.

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- What values (whose values) should be incorporated into AI systems?