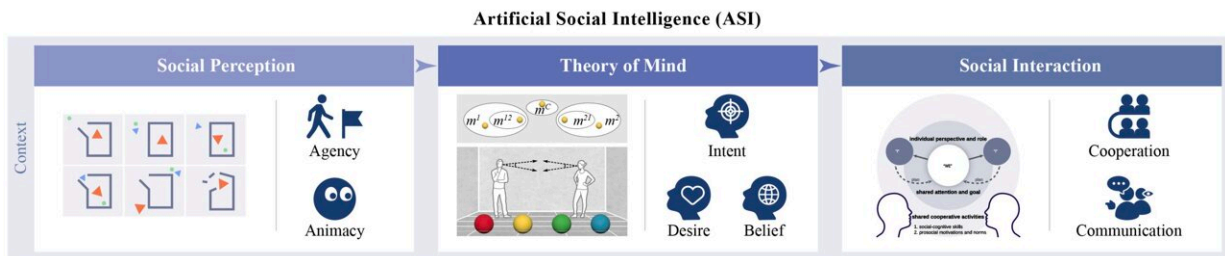


Social intelligence is the next frontier for AI, researchers say

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Three inextricably linked aspects of social intelligence—social perception, Theory of Mind and social interaction—are the cognitive tools that will help computational science to advance artificial intelligence beyond contemporary models. Credit: *CAAI Artificial Intelligence Research*, Tsinghua University Press

Siri and Google Assistant may be able to schedule meetings on request, but they don't have the social understanding to independently prioritize the appointments—yet. According to researchers based in China, artificial intelligence (AI) may be smart, but it is stunted by a lack of social skills.

They published their review of the current state and call for future directions in *CAAI Artificial Intelligence Research*.

"Artificial intelligence has changed our society and our [daily life](#)," said first author Lifeng Fan, National Key Laboratory of General Artificial

Intelligence, Beijing Institute for General Artificial Intelligence (BIGAI). "What is the next important challenge for AI in the future? We argue that Artificial Social Intelligence (ASI) is the next big frontier."

ASI, the researchers said, comprises multiple siloed subfields, including social perception, Theory of Mind—the understanding that others think from their own point of view—and [social interaction](#). By using cognitive science and computational modeling to identify the gap between AI systems and human social intelligence, as well as current issues and future directions, Fan said the field will be better equipped to advance.

"ASI is distinct and challenging compared to our physical understanding of the world; it is highly context-dependent," Fan said. "Here, context could be as large as culture and common sense or as little as two friends' shared experience. This unique challenge prohibits standard algorithms from tackling ASI problems in real-world environments, which are frequently complex, ambiguous, dynamic, stochastic, partially observable and multi-agent."

As such, Fan said, ASI requires a comprehensive approach, since improving specific components of an ASI system may not always result in improved performance—unlike contemporary AI systems. Rather, ASI requires the ability to interpret latent social cues, such as eye-rolling or yawning, to understand other agents' mental states, such as belief and intent, and to cooperate in a shared task.

"Multidisciplinary research informs and inspires the study of ASI: Studying human social intelligence provides insight into the foundation, curriculum, points of comparison and benchmarks required to develop ASI with human-like characteristics," Fan said.

"We concentrate on the three most important and inextricably linked aspects of social [intelligence](#): [social perception](#), Theory of Mind and

social interaction, because they are grounded in well-established [cognitive science](#) theories and are readily available tools for developing computational models in these areas."

According to Fan, the best approach is a more holistic one, mimicking how humans interface with one another and the world around them. This requires an open-ended and interactive environment, as well as consideration for how to introduce better human-like biases into ASI models.

"To accelerate the future progress of ASI, we recommend taking a more holistic approach just as humans do, to utilize different learning methods such as lifelong learning, multi-task learning, one-/few-shot learning, meta-learning, etc.," Fan said.

"We need to define new problems, create new environments and datasets, set up new evaluation protocols, and build new computational models. The ultimate goal is to equip AI with high-level ASI and lift human well-being with the help of Artificial Social Intelligence."

More information: Lifeng Fan et al, Artificial Social Intelligence: A Comparative and Holistic View, *CAAI Artificial Intelligence Research* (2023). [DOI: 10.26599/AIR.2022.9150010](https://doi.org/10.26599/AIR.2022.9150010)

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