A Novel Rôle for AI?

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Abstract

In the present, one of the most interesting technological ideas is agent, in particular, mobile intelligent agents on a global and public environment such as the Internet. On the one hand, mobility contributes to or is somehow associated with intelligence. On the other hand, both intelligence and mobility tend to be desirable properties of large pieces of software.

At a very high level, intelligent-mobile-agent programming lies on some form of representing personality, which can be based on traditional and symbolic programming, and on inductive learning.

Further, other agents should be able to tell whether any particular entity is an agent or a person. This latter challenge can be seen as the opposite of Turings test, and finally, whether that new rôle is in the scope of AI, or whether the issue belongs to a similar area in computer science, is open.

1 A Note on Knowledge Representation and Reasoning

In the present, one of the most interesting technological ideas is agent, in particular, mobile intelligent agents on a global and public environment such as the Internet.

Firstly, this is because mobility contributes to intelligence. We normally learn by some form of communication: by using five-sense perception or by some visual language, including written or spoken words. Therefore, mobility is somehow associated with intelligence. In particular, mobility can be of such distance that it involves knowledge about culture, philosophical and religious background, foreign languages, and so on. Agents (mainly mobile ones) on the Internet also deal with these subtleties often.

Secondly, on the one hand, regardless of the fact that intelligence is not a well-known concept, intelligence is certainly a desired property of most complex software. On the

other hand, in order to be uniformly general, technologies should offer the ability of computation to be mobile.

In general, if the technology is simple enough, it does not need techniques of AI. However, as it is known, societies are becoming increasingly complex, and so technologies are increasingly more intelligent.

More than simply being part of some synthesis of technologies, the concept of agent introduces a new rle to AI: once agents are conceived for representing entities (ultimately humans), systems not only need to show intelligent behaviour, which is a great challenge by the way, but they also need to be sufficiently similar to the represented entities, while it is important to keep their identities public, i.e. other agents should be able to tell whether any particular entity is an agent or the person themselves. This latter challenge can be seen as the opposite of Turings test.

In any case, if the agents are not sufficiently similar to their entities, they will not even be used.

At this very high level, programming lies on some form of representing personality, which is something complementary to the area of knowledge representation. This kind of programming can be based on traditional and symbolic programming, as well as on inductive learning.

One can argue whether this ability, of the agent to seem similar to the user while keeping their own identities, belongs to the area of AI, or whether it belongs to a new orthogonal area in computer science. I leave this issue for reflection.