

Editorial: What Makes JAGI Special

Pei Wang

Temple University
Room 1050, Wachman Hall
Philadelphia, PA 19122, USA

PEI.WANG@TEMPLE.EDU

This Inaugural Editorial attempts to provide some additional explanation (beside what is already in the documents at the JAGI website) on why this journal is started on this topic, at this moment, and in this way.

The research of Artificial Intelligence (AI) began with the aim of using electronic computers to produce “intelligence” comparable with that of the human mind. After a short optimistic period, people realized that the task is much harder than was initially estimated, and consequently the mainstream AI research turned to narrowly defined tasks that can be handled by domain-dependent and problem-specific solutions.

Influenced by this atmosphere, the existing AI journals tend to encourage research on isolated topics, rather than research aimed at intelligence as a whole. They often reward incremental improvements on existing theories and applications, while ignore issues in the basic assumptions of the work, which exhibit it to be extended and scaled up to problems outside the initial consideration, even slightly.

In recent years, more and more AI researchers began to feel the necessity and possibility of returning to the original goal of the field, that is, to treat “intelligence” as a whole, and as a domain-independent and general-purpose mechanism. Of course, here “general-purpose” does not mean *to be able to solve all problems perfectly*, but *to be able to work in various situations, including novel and unexpected ones*.

General-purpose systems and special-purpose systems have different design considerations and evaluation criteria. The history of AI research hints that the successes in the latter do not naturally extend to the former, nor can they be simply pooled together to achieve the former, without the guidance of a clear overall design. Therefore, different review criteria and procedure are needed for publications of research on general-purpose AI systems. Under this consideration, in the First Conference on Artificial General Intelligence (<http://agi-08.org>), those in attendance passed a motion calling for the establishment of an academic journal focusing on “Artificial General Intelligence (AGI)”.

By starting JAGI, we, the editors, are not claiming that there is already a widely accepted theory and technique to reach the goal of general intelligence, or even that there is a proof on the achievability of such a goal. Instead, we haven't been convinced that such a goal is impossible. Therefore, we believe the research in this field should be encouraged, especially given its great potential, which is hard to overestimate.

We fully understand the challenge this field is facing. Even though this kind of research has been carried out for more than half a century, the field now labeled “AGI” is still in its infancy. Almost all of the previous projects failed to deliver their planned functionalities, and it is very likely that most of the current projects will end up the same. However, the difficulty of the problem does not imply its impossibility. On the contrary, if nobody dares to try, it will really become impossible. Even though it is rational for the outside people to keep their skepticism about this research, the dedicated researchers should be allowed to continue their exploration. This journal is primarily established for those researchers, here they can exchange ideas, and therefore gradually put this research on a solid ground.

Beside the hardness of the problem, the emerging field of AGI must face the huge diversity among the existing projects, too. At the current time, AGI researchers not only disagree on the solutions to the problem, but also on what the problem exactly is. Consequently, there is little consensus on how to compare designs and to evaluate progress. There is no established authority in AGI, and researchers' fame earned in traditional AI (or Cognitive Science, etc.) does not fully guaranty the value of their opinions on AGI. To deal with this situation, this journal is designed to be more open and transparent, so as to provide a larger readership, to encourage a wider involvement from the research community, and to support a closer interaction among the authors, the reviewers, and the readers. The journal will not insist on a certain understanding of “intelligence” or “AGI”, or on a set of topics and techniques. Instead, all theoretical and technical paths can be explored, though all the results will be critically checked and evaluated by the peer reviewers and community members. On the other hand, the journal does require the submissions to be clearly AGI-oriented (though “AGI” is interpreted broadly), which means papers prepared according to the guideline of conventional AI journals may not be acceptable by JAGI.

Given that AGI is still widely taken as “mission impossible”, there must be many people who are skeptical about the credibility of this journal. This skepticism cannot be fully resolved by our premise and argument. Instead, it can only be answered by the concrete contributions of the authors, the editors, and the members of the AGI community. Since we already committed ourselves to this research, we will do our best to cultivate this infant journal and this young field.

In summary, the following is what makes JAGI special:

- (1) It explicitly and exclusively focuses on AGI research.
- (2) Its review process and criteria are designed to fit this focus.
- (3) It will be supported by the AGI community, and in turn play a key role in the growth of this research field.