
A New Journal for Cognitive Systems

Pat Langley

PATRICK.W.LANGLEY@GMAIL.COM

Computing Science and Engineering, Arizona State University, Tempe, AZ 85287 USA

Computer Science Department, University of Auckland, Private Bag 92019, Auckland, New Zealand

This is the inaugural volume of a new journal, *Advances in Cognitive Systems*. The publication's main purpose is to communicate research progress in the field of cognitive systems, which aims to understand, in computational terms, and reproduce, in computational artifacts, the entire range of intelligent behavior observed in humans. As such, it provides a meeting place for those who remain committed to the original vision of artificial intelligence, from which it inherits these audacious but exciting research goals.

New journals should be created rarely and only when three conditions hold. First, there should be a well-specified area of research that is broad enough to encompass many different approaches but still unified enough in aims and assumptions to support common ground among its contributors. Second, there should be a substantial body of ongoing work in this area, so that there will be enough material to publish on a sustainable basis. Finally, authors in the area should have encountered difficulty publishing their results in standard outlets, so that they need a new home for their research. I believe that all three conditions hold for the field of cognitive systems.

I have already noted the high-level aims of the cognitive systems community, but researchers in this paradigm also share a number of key assumptions that I review in a later essay in this volume. These include commitments to the study of high-level cognition, to structured representations and heuristic methods, to system-level accounts of mental abilities, to the relevance of human cognition, and to exploratory forms of research. These emphases distinguish the paradigm from other approaches to artificial intelligence.

There is also strong evidence for a sizable community of cognitive systems researchers and a substantial body of associated work. Last year's AAAI Fall Symposium on Advances in Cognitive Systems received 50 submissions on a wide variety of topics and attracted some 75 registered attendees. Many of that meeting's participants indicated they were actively continuing their research, and informal discussions with others has suggested there are many additional ongoing efforts. Thus, it seems clear that cognitive systems is an active area.

However, the prevailing research climate has kept much of this research below the radar. Established AI journals and conferences have strong biases toward certain tasks, techniques, and evaluation styles that run directly counter to those of the cognitive systems movement. As a result, many authors have found it difficult to publish their research results or, if they succeed, have done so only by recasting them in terms familiar to the mainstream. Important and interesting progress in cognitive systems has been overlooked because it does not align with majority views.

Together, these factors suggested the need for a new venue in which to report research on cognitive systems. However, the artificial intelligence community has long had two alternative modes of publication: journals and conference proceedings. Each medium has its distinctive advantages. Journals provide more space for technical details and offer better memory across repeated submissions, whereas proceedings have more rapid turnaround time and are associated with physical meetings at which researchers can interact.

However, the past decade has seen a gradual convergence of these two publishing genres. Many journals have come to rely heavily on special issues with submission and reviewing deadlines, while some conferences have introduced conditional acceptance of papers. Moreover, the advent of electronic publishing has diminished the need for hard copies and the importance of separate formats, reducing the distinction between journals and proceedings even more.

Advances in Cognitive Systems takes this convergent evolution a step further. It will act as an electronic journal that publishes peer-reviewed articles, as well as invited essays such as those appearing in this inaugural volume. But it will also serve as the electronic proceedings of the Annual Conference on Advances in Cognitive Systems (<http://www.cogsys.org/>), which will bring together researchers in the area every year. Papers will be longer than those in traditional proceedings but shorter than those in traditional journals.

Prospective authors can find information at <http://www.cogsys.org/journal/information/> about paper format and length, along with details of the submission process. They can also visit the URL <http://www.cogsys.org/journal/faq/> to view answers to frequently asked questions about the scope of the journal and associated conference. Cognitive systems has a broad and inclusive charter that includes many topics, but not all AI research falls under its umbrella or there would be no need to launch an entirely new, distinctive journal.

All new enterprises entail some risks, but they also offer opportunities. In this case, we have the chance to create an energetic, forward-looking community of cognitive systems researchers and to foster progress toward the original vision of artificial intelligence: the development of computational artifacts that reproduce the full range of human intellectual abilities. If *Advances in Cognitive Systems* can provide an effective means to these worthwhile ends, then it will have served the purposes for which it was created.