
Recent Progress in Cognitive Systems

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This publication is the eighth volume of *Advances in Cognitive Systems* since its inauguration in 2012. The electronic journal presents commentaries and research papers in a scientific paradigm that holds much in common with the original vision for artificial intelligence. To this end, it emphasizes high-level cognitive abilities that rely on structured representations and heuristic methods, as well incorporating ideas from psychology and adopting a systems perspective. Despite these common themes, authors' contributions describe a diverse set of theoretical frameworks that address a wide variety of intellectual phenomena. The field's ultimate objective is to understand and emulate the full range of human-like cognition in computational terms.

This volume includes revised versions of papers from the *Seventh Annual Conference on Advances in Cognitive Systems* (<http://www.cogsys.org/conference/2019/>), which occurred at the Massachusetts Institute of Technology in August, 2019. One meeting highlight was news of the third Herbert A. Simon Prize for Advances in Cognitive Systems, which comes with a \$10,000 cash award from the Cognitive Systems Foundation. This recognizes senior researchers who have made sustained contributions to the computational study of high-level cognition in humans and machines, thus following in its namesake's footsteps. After deliberation, the selection committee decided that:

The recipient of the 2019 Herbert A. Simon Prize for Advances in Cognitive Systems is Patrick Henry Winston, for his seminal research on concept learning, analogy, common-sense reasoning, and story processing, which he saw as key to understanding intelligence, and for his textbooks, courses, and videos, which educated generations of students in artificial intelligence.

The recipient was an important contributor to the field for nearly 50 years, starting with his influential 1970 dissertation on learning structured concepts from examples. Besides his many research contributions, Winston was a leading AI educator, a consistent champion of clear communication, and a reliable advocate of the cognitive systems movement, inspiring many junior scholars to pursue careers in the field. He was an excellent role model that we should all strive to imitate.

The Seventh Annual Conference received 46 submissions that were reviewed by a 37-person program committee and a six-person organizing committee, from which the program chair – Michael Cox – selected 16 papers for oral presentation and possible journal publication. The event was well attended, attracting over 80 participants from many different research centers. The seven articles in the current volume report advances on abductive inference, language generation, knowledge-guided perception, and high-level analyses of cognition, with others scheduled to appear in its successor. Taken together, they report important recent progress in the field of cognitive systems.