

2002 ACL Lifetime Achievement Award

The ACL Lifetime Achievement Award

The ACL Lifetime Achievement Award was instituted on the occasion of the 40th anniversary meeting of the Association. The award will henceforth be presented for scientific achievement, of both theoretical and applied nature, in the field of Computational Linguistics. The executive committee of the ACL will nominate and select at most one award recipient annually at its winter meeting, considering the originality, depth, breadth and impact of the entire body of the nominees' work in computational linguistics. The award is a crystal trophy (the nearly transparent object being present to Aravind Joshi in the accompanying photo), and the recipient is invited to give a 45-minute speech on his views on the development of Computational Linguistics at the annual meeting. The speech is introduced by the announcement of the award, which is confidential until then. The First Recipient of ACL Lifetime Achievement Award

The Association for Computational Linguistics is proud to present its first Lifetime Achievement Award to Prof. Aravind Joshi of the University of Pennsylvania.

Aravind Joshi, left, receives the first ACL Lifetime Achievement Award from John Nerbonne, ACL President. The award was presented at the 40th meeting of the ACL on July 8, 2002, at the University of Pennsylvania. A Brief Laudatio

Aravind Joshi was born in 1929 in Pune, India, where he completed his secondary education as well as his first degree in Mechanical and Electrical Engineering, the latter in 1950. This was followed by a Master's degree in Communication Engineering in Bangalore. He then worked as an engineer at RCA in Camden, New Jersey, from 1954-58, concurrently completing an M.S. in Electrical Engineering at the University of Pennsylvania. He worked as a research assistant in Linguistics at Penn from 1958-60, while completing his Ph.D. in Electrical Engineering, in 1960.

He worked as assistant professor, then associate professor in the Electrical Engineering department until 1972, when a separate department of Computer and Information Science was created. He assumed the position of chair of the new department as full professor, a position he held until 1985. In 1979 he had co-founded the famous Cognitive Science Program at Penn, with Lila Gleitman, a psycholinguist. In 1983 he was awarded an endowed chair, the Henry Salvatori Professorship of Computer and Cognitive Sciences.

Prof. Joshi's work and the work of his Penn colleagues at the frontiers of Cognitive Science was rewarded in 1991 by the establishment of a National Science Foundation Science and Technology Center for Research in Cognitive Science, which Aravind Joshi co-directed until 2001. It is a unique institution, with very active participation from Computer Science, Linguistics and Psychology. Honors

The ACL did not choose Prof. Joshi for lack of recognition to-date. He was a Guggenheim fellow in 1971-72, served as president of this association in 1975, and was made a fellow of the Institute of Electrical and Electronics Engineers (IEEE) in 1976. He received the 1987 Best Paper Award at the National Conference on Artificial Intelligence (AAAI), and was elected a Founding Fellow of the AAAI in 1990. He has served as a permanent member of the International Committee on Computational Linguistics, the oversight board for the COLING conferences, since 1995. He received the Research Excellence Award of the International Joint Conference of Artificial Intelligence (IJCAI) in 1997, was chosen a Fellow of the Association for Computing Machinery (ACM) in 1998, and was elected to the National Academy of Engineering in 1999. Supervision

Prof. Joshi has supervised thirty-six Ph.D. theses to-date, on topics including information and coding theory, and also pure linguistics. The list of his advisees is a good start for a Who's Who in computational linguistics.

- Lynette Hirschman, 1973
- Masako Takahashi, 1972
- David Klappholz, 1974
- Leon Levy, 1977
- Ralph Weischedel, 1975
- Stanley Rosenschein, 1975
- Thomas Kaczmarek, 1977
- S.Jerrold Kaplan, 1979
- Kathleen McKeown, 1982
- Eric Mays, 1984
- Kathleen McCoy, 1985
- K.Vijayshankar, 1987
- David Weir, 1988
- Yves Schabes, 1990
- Robert Frank, 1992

- Lyn Walker, 1993
 - Owen Rambow, 1994
 - B.Srinivas, 1996
 - Christy Doran, 1997
 - Matthew Stone, 1998
 - Fei Xia, 2000
 - Seth Kulick, 2001
 - Anoop Sarkar, 2002
- Productivity and Impact Aravind Joshi is the author of two books and 113 articles on computational linguistics (as of May, 2002). He has written on formal language theory; parsing and generation; tree automata; the logics of partial information; natural language interfaces to information systems; the grammar of long-distance dependencies, extraposition, nested and crossed dependencies, coordination and even code-mixing, the sort of speech that arises in language contact situations when you begin a sentence in one language y terminar en una otra.

It is undoubtedly presumptuous to assess Aravind Joshi's impact, but since that is one of the criteria for the award, it is nonetheless appropriate. One indication is given by one of the few bibliographies for our field, Gerald Gazdar's bibliography of computational linguistics in the 1980's, in which Prof. Joshi was the single most productive author.

One of the most important things you can say about a scientist is that he changed the way people think about a central topic in the field. One does not need to reflect long to see Aravind Joshi's impact on computational linguistics. Like most dedicated professionals, he has followed issues in the field broadly and is always valued as participant in conferences for the breadth of his knowledge and his acute, but usually gentle reactions to presentations.

Nonetheless, two areas stand out in which computational linguistics simply would not be the same with Aravind Joshi's contributions.

- Prominence in Discourse Together with Barbara Grosz, Scott Weinstein and others, Joshi has proposed and successfully tested a theory of the sort of prominence in discourse that accounts for the choice of anaphoric antecedents. The theory combines local, grammatical information (e.g., whether potential antecedents are subjects or objects) with a more global stack discipline reflecting the hierarchy of informational tasks in discourse.
- Formal Syntax Chomsky's challenge to mathematical linguistics was to characterize the grammatical mechanisms available to human languages. What is the weakest class of grammars, or equivalently, automata, that generate natural languages? Joshi's contribution to this central question was the development of tree-adjointing grammars, (TAG's) the only popular mathematical model of language in which the primitives are trees, rather than strings. TAG's are intermediate in generative capacity between context-free and context-sensitive languages; they can be parsed efficiently (in low-order polynomial time) and appear capable of modeling natural language syntax (though here they may require embellishments due to work by Joshi and his student, Owen Rambow). In addition to being subjected to meta-theoretical analysis, TAG's have been applied to extensive grammatical development, parsing, generation and semantic interpretation. Together with his students Vijayshankar and David Weir, Joshi has shown that TAG's are formally equivalent to several other popular models, and this convergence suggests that a natural class of mechanisms has been identified.

It is a great pleasure for me to present Prof. Aravind Joshi with the first ACL Lifetime Achievement award.

John Nerbonne,
ACL President, 2002 The overhead sheets from Joshi's Award Address are also available.