2005 ACL Lifetime Achievement Award

Martin Kay: ACL Award Winner! 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, and the recipient is invited to give a 45-minute speech on his or her 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 Recipient of the 2005 ACL Lifetime Achievement Award

The Association for Computational Linguistics is proud to present its 2004 Lifetime Achievement Award to Martin Kay. The award was presented at the 43rd meeting of the ACL.

A Brief Laudatio

I am extremely pleased to introduce this year's ACL Lifetime achievement award recipient: Martin Kay. Professor Kay has held a variety of important positions, most recently at the Palo Alto Research Center and Stanford University. On a more personal level, I have been priveleged to work with Martin over the two decades that I have been in the field. Since a thorough description of his important research contributions to our field would take more time than I have available, I will restrict my comments to just four of the areas that his work has revolutionized.

Martin Kay and his collaborator Ron Kaplan made major contributions to the development of the chart parsing dynamic programming algorithms for parsing context-free phrase-structure grammars. Martin recognized that such parsing algorithms are really just instances of a general algorithm schema that he elucidated, with specific parsing algorithms arising from different instantiations of the agenda and other components of the schema. This work served as the foundation for much of the later work in unification grammars and statistical parsing.

Unification grammars are a second major area that Martin contributed to. Unification grammars generalize the atomic labels of context-free grammars to labels with a rich internal structure that can be used to systematically encode the syntactic and semantic properties of constituents. One of Martin's insights was to recognize that in order to take advantage of the processing order flexibility offered by the chart parsing algorithms mentioned above, the basic operations on these structured labels would have to be associative and commutative, i.e., order-independent. Martin played a key role in recognizing unification as such an operation, and was instrumental in developing both unification grammars and algorithms for parsing such grammars.

The linguistic application of finite-state automata and transducers is a third area largely pioneered by Martin Kay together with his colleague Ron Kaplan. They recognized that these devices were not just of interest to formal language theory, but that their closure properties meant that large machines capable of performing non-trivial tasks could be systematically constructed via a set of primitive operations. They were largely responsible for developing the cascades of finite-state transducers that implement phonological rules and other rewriting processes.

Finally, Martin has made numerous contributions to the field of machine translation. His contributions in this area alone could be the subject of a whole talk, but I will mention only one contribution of Martin's that I think is especially insightful: translation as negotiation. If you really want to understand this you should read Martin's papers on the topic, but the basic idea is that instead of regarding translation as a deterministic mapping of a sentence from one language via a series of representations to a sentence in another language, translation should be regarded as an optimization problem involving possibly incompatible constraints.

I've just listed four of the major areas that Martin has made significant contributions to, and if I had more time I would have listed several more. Please join me in welcoming Martin Kay, this year's recipient of the ACL's lifetime achivement award.

by Mark Johnson