

Distinguished Lecture Series 2006

Department of Computer Science

And Logic Begat Computer Science: When Giants Roamed the Earth

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3:30 pm

1148 Gerdin Business Building



During the past fifty years there has been extensive, continuous, and growing interaction between logic and computer science. In fact, logic has been called "the calculus of computer science". The argument is that logic plays a fundamental role in computer science, similar to that played by calculus in the physical sciences and traditional engineering disciplines. Indeed, logic plays an important role in areas of computer science as disparate as architecture (logic gates), software engineering (specification and verification), programming languages (semantics, logic programming), databases (relational algebra and SQL), artificial intelligence (automated theorem proving), algorithms (complexity and expressiveness), and theory of computation (general notions of computability). This non-technical talk will provide an overview of the unusual effectiveness of logic in computer science by surveying the history of logic in computer science, going back all the way to Aristotle and Euclid, and showing how logic actually gave rise to computer science.

Moshe Y. Vardi is the George Professor in Computational Engineering and Director of the Computer and Information Technology Institute at Rice University. Prior to this, he was chair of the Computer Science Department at Rice University, and at the IBM Almaden Research Center, where he managed the Mathematics and Related Computer Science Department. His research interests include database systems, computational-complexity theory, multi-agent systems, and design specification and verification. Vardi received his Ph.D. from the Hebrew University of Jerusalem in 1981. He is the author of over 300 technical papers, as well as co-author of a book titled "Reasoning about Knowledge". He is the editor of several international journals. Vardi is the recipient of several prestigious awards, including three IBM Outstanding Innovation Awards, the 2000 Goedel Prize, and the 2005 ACM Paris Kanellakis Award for Theory and Practice. He is a Guggenheim Fellow, an ACM Fellow, a member of the National Academy of Engineering and the European Academy of Sciences.

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