Donald Ervin Knuth

Born January 10, 1938, Milwaukee, Wis.; writer and teacher of the Art of Programming, *three of seven promised volumes having been completed; developer of the text language TEX.*

Education: BA and MS,[1] summa cum laude, physics, Case Institute of Technology, 1960; PhD, mathematics, California Institute of Technology, 1963.

Professional Experience: faculty member, California Institute of Technology, 1963-1968; mathematician, Institute for Defense Analysis, Princeton, N.J., 1968-1969; Fletcher Jones Professor of Computer Science, Stanford Junior University, 1969-1989; professor of the Art of Programming, 1990-present.

Honors and Awards: ACM Grace Murray Hopper Award, 1971; ACM Turing Award, 1974; Lester R. Ford Award, Mathematical Association of America, 1975; National Medal of Science, 1979; IEEE McDowell Award, 1980; IEEE Computer Society Pioneer Award, 1982; Computer Science Education Award, 1986; ACM Systems Software Award, 1986; Steele Prize, Association for Management Systems, 1986; New York Academy of Sciences Award, 1987; Franklin Medal, 1988; J.D. Warnier Prize, 1989; member, National Academy of Sciences, 1975; member, National Academy of Engineering, 1981; foreign associate, L'Academie des Sciences, Paris, 1992.

Donald Knuth cannot easily be summed up in a single sentence; he is like the elephant being described by six blind men, each with a restricted “view” of the whole beast. While Knuth is most cited for his work in computer software, ranging from compilers to word processing and algorithms, each biographer will find a pinnacle of excellence to emphasize. This author would credit Knuth with the development of the concept of LR-parsing, although it took others, notably Franklin DeRemer (1971), to provide a practical methodology for implementation. Computer science educators look at Knuth's Art of Programming series of books and give him tremendous credit for enhancing the study of algorithms and data structures. The word-processing community would look to Knuth's TEX system as a prime example of the application of user needs and programming language principles to the development of a word processor which, like Unix, transcends machine boundaries. Humanists would see an organist and prolific writer.

QUOTATIONS

“I sometimes consider myself a pure mathematician, but usually I'm a pure computer scientist who has found connections between computers and mathematics.”

“Science is what we understand well enough to explain to a computer; Art is everything else.” *(Reader's Digest, July 1987, p. 24)*

[1] The work for Knuth's bachelor's degree was so distinguished that the faculty of the Case Institute of Technology voted to award simultaneous bachelor's and master's degrees.

"Instead of imagining that our main task is to instruct a *computer* what to do, let us concentrate rather on explaining to *human beings* what we want a computer to do." *(Computer Journal,* Vol. 27, 1984, p. 97)

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UPDATES

Color portrait added (MRW, 2013)