Ivan Edward Sutherland

Born May 16, 1938, Hastings, Neb.; inventor of the 1963 interactive graphics system—Sketchpad, later commercial developer of graphical systems and recipient of the 1988 ACM Turing Award.

Education: BS, electrical engineering, Carnegie Mellon University, 1959; MS, electrical engineering, California Institute of Technology, 1960; PhD, electrical engineering, MIT, 1963.

Professional Experience: consultant, Lincoln Laboratory, MIT, 1961-1964; director, Information Processing Technology, Advanced Research Projects Agency, Department of Defense, 1964-1966; associate professor, electrical engineering, Harvard University, 1966-1968; University of Utah: associate professor, 1968-1972, professor, electrical engineering, 1972-1976; Fletcher Jones Professor and department head of computer science, California Institute of Technology, 1976-1980; cofounder, vice president, and chief scientist, Evans and Sutherland Computer Corp., 1968-1976; founded Sutherland, Sproull, and Associates, a consulting firm, and Advanced Technology Ventures, a venture capital firm, Palo Alto, Calif, 1980-1990; vice president and fellow, Sun Microsystems Laboratories, Inc., 1990-present.

Honors and Awards: Valdimir K. Zworykin Award, National Academy of Engineering, 1972; Outstanding Accomplishment Award, Systems, Man and Cybernetics Society, 1975; IEEE Computer Society Pioneer Award, 1985; IEEE Emmanuel R. Piore Award, 1987 (joint with David C. Evans); ACM Turing Award, 1988; member, National Academy of Sciences; member, National Academy of Engineering; honorary degrees from Harvard University, California Institute of Technology, and the University of North Carolina; fellow, ACM, 1994.

Ivan E. Sutherland received the 1988 ACM A.M. Turing Award for his pioneering contributions to the field of computer graphics:

> For his pioneering and visionary contributions to computer graphics, starting with Sketchpad, and continuing after. Sketchpad, though written twenty-five years ago, introduced many techniques [which are] still important today. These include a display file for screen refresh, a recursively traversed hierarchical structure for modeling graphical objects, recursive methods for geometric transformations, and an object-oriented programming style. Later innovations include "Lorgnette" for viewing stereo and colored images, and elegant algorithms for registering digitized views, clipping polygons, and representing surfaces with hidden lines.

Sutherland is the inventor and developer of the interactive computer graphics field 25 years ago. Sketchpad's many innovations include a display file for screen refresh, a recursively traversed hierarchical structure for modeling graphical objects, recursive methods for geometric transformations, and an object-oriented programming style. From 1976 to 1980, Sutherland was the Fletcher Jones Professor and chair of computer science at CalTech. Prior to joining the CalTech faculty, Sutherland and David C. Evans founded Evans and Sutherland Computer Corporation, where Sutherland served as vice president and chief scientist. Both he and Evans taught at the University of Utah during this period, and were instrumental in establishing Salt Lake City

as a premier center for computer graphics. He remains actively involved in E&S as a major shareholder and board member.

Sutherland moved to Utah from Harvard University, where he was Gordon McKay Associate Professor of Computer Science. Earlier, he served as director of the Information Processing Techniques Office of the Defense Advanced Research Projects Agency, overseeing DARPA's funding of academic computer science during an exceptionally productive and influential period.

QUOTATION

"I like everything you say but I think it's all bull."

BIBLIOGRAPHY

Biographical

Frenkel, Karen A., "An Interview with Ivan Sutherland," *Comm. ACM*, Vol. 32, No. 6 June 1989, pp. 712-718.

UPDATES

Portrait added (MRW< 2013).

Additional biographical and professional material is available on the ACM Turing Award website.