

Richard G. Shoup

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www.rgshoup.com

Professional Experience

Boundary Institute - Los Altos, California (www.boundary.org)

President, co-founder - Feb 2000 to present

Non-profit research institute studying foundations of mathematics, physics, and computing.

Interval Research Corporation - Palo Alto, California

Member of the Research Staff - Feb 1993 to Apr 2000

Research in reconfigurable computing, hardware/software architectures, visual languages, mathematics and theory of computation. Project and area coordinator/group manager.

Rapport Incorporated - Redwood City, California

Principal Software Architect, software tools group manager - Nov 2006 to Jun 2008

Advanced tools for next-generation multicore reconfigurable architectures.

Quicksilver Technologies - San Jose, California

Software Architect - Sep 2002 to Dec 2003

Design and implementation of advanced development tools for multicore architectures.

Aurora Systems - Redwood City, California

President and Chief Executive Officer - Mar 1980 to Jan 1985

Vice President, Research & Development - Jan 1985 to May 1989

Chairman of the Board - Jan 1985 to Jan 1989

Conceived and co-founded a leading early supplier of digital videographics and animation systems used by graphic artists in professional video applications. Responsible for the company's early management and operations including business planning, product strategy, and team building. Instrumental in acquiring early private financing and later venture capital financing. Principal architect of systems hardware and software, and manager of the engineering teams. Initiated and guided the company's acquisition in December 1988.

Xerox Palo Alto Research Center (PARC) - Palo Alto, California

Member of the Research Staff - Dec 1970 to Oct 1979

As one of the first employees at this pioneering laboratory, conducted research in computer graphics and animation, digital video, visual communications, and theories of computation. Designed digital videographic systems, software and VLSI circuits. Conceived and developed the first digital frame-buffer-based videographics and animation system for graphic artists known as "SuperPaint", now in the permanent collection at the Computer Museum History Center in Mountain View, California.

Private consultant - San Jose, California - 1989 to present

Research consulting to Silicon Valley companies in reconfigurable computing, hardware & software architectures, computer graphics, science and technology. Technical and strategic consulting in product design and development, patenting and intellectual property. Patent litigation support including prior art, analysis, strategy, and presentation.

Education

Ph. D. Computer Science, Carnegie-Mellon University, Pittsburgh, PA, March 1970.
Dissertation "Programmable Cellular Logic Arrays", thesis adviser Gordon Bell.

B. S. Electrical Engineering, Carnegie-Mellon University, Pittsburgh, PA, June 1965.

Selected Publications (more available at www.rgshoup.com/prof/pubs and www.boundary.org)

Shoup, R., "Reconfigurable Systems, New Tools and New Math", ERSA'04 - Int'l Conf on Engineering of Reconfigurable Systems and Algorithms, Las Vegas, June 2004. *Invited keynote, argues for formal methods and new mathematics throughout hardware and software design.*

Shoup, R., "Not much has changed in computing in the last 50 years...", Foreword to Field-Programmable Gate Arrays, John V. Oldfield and Richard C. Dorf, Wiley-Interscience, 1994. *A rant about how we're still computing like Von Neumann, whereas with true reconfigurable computing, the computer could be the computation desired at each moment.*

Shoup, R., "Physics without Causality - Theory and Evidence", Frontiers of Time: Retrocausation -- Experiment and Theory, D. P. Sheehan editor, AIP Conference Proceedings, 87th Meeting of the AAAS Pacific Division, University of San Diego, June 2006.

Nelson, R.D., Radin, D.I., Shoup, R., and Bancel, P.A., "Correlations of Continuous Random Data with Major World Events", *Foundations of Physics Letters*, vol. 15, no. 6, December 2002. *Anomalous behavior of random number generators on Sep. 11, 2001.*

Shoup, R., "Anomalies and Constraints - Can clairvoyance, precognition and psychokinesis be accommodated within known physics?", *Journal of Scientific Exploration*, vol. 16, no. 1, 2002, pp. 3-18.

Shoup, R., "Consciousness, Physics, and Computer Science", presented at the Society for Scientific Exploration conference, Michigan State University, May 2007. *Consciousness and quantum measurement, self-reference and paradox, Godel, the Self.*

Shoup, R., "Constructive Physics, or, There's Only One Way to Build a Universe", ANPA '96 Conference, 1996. *How Boundary Math represents logic, how self-reference gives rise to Time, and a Constructive (rather than Reductive) approach to a unified theory of everything.*

Shoup, R., "Things Ain't What They Used To Be - On Paradox and the Nature of Time", ANPA West '96 Conference, 1996. *Paradoxes in logic and in circuits, the generation of Time, and speculations about the relevance of self-reference to Consciousness and Artificial Intelligence.*

Shoup, R., "Space, Time, Logic, and Things", PhysComp '94, Workshop on Physics and Computation, IEEE Press, 1995.

Shoup, R., "A Complex Logic for Computation with Simple Interpretations for Physics", PhysComp '92, Workshop on Physics and Computation, IEEE Press, 1993.

Honors

Television Academy Award ("Emmy"), September 1983 - National Academy of Television Arts and Sciences Engineering Award, Outstanding Achievement in Engineering Development: "For his concept and development of the first electronic graphics creative system ...". A separate Emmy was also awarded to the Xerox Corporation for their support of this work.

Computer Graphics Achievement Award, August 1990 - ACM Siggraph: "In recognition with his colleague Alvy Ray Smith for seminal contributions to Computer Paint Systems".

Academy Award, February 1998 - Academy of Motion Picture Arts and Sciences, Academy Plaque for Scientific and Technical Achievement, with colleagues Alvy Ray Smith and Thomas Porter: " For their pioneering efforts in the development of digital paint systems used in motion picture production".

Professional Activities

Current member ACM, IEEE, ANPA, others; paper referee for ACM, NSF, JSE, and other agencies; ACM and SID National Conference Committees, SMPTE standards committees, ANPA advisory board; instructor/coach Math Olympiad, Country Lane Elementary School.

Other Interests

Music - lead and solo trombone with jazz big bands and other groups in the San Francisco Bay Area.