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Robert J. McEliece
Curriculum Vita

Education

B.S., Mathematics, California Institute of Technology, 1964.

One year graduate study in Mathematics, Trinity College, University of Cambridge, 1964–1965.

Ph.D., Mathematics, California Institute of Technology, 1967. (Thesis advisor: Professor Marshall Hall, Jr.)

Employment History

(1999-present) Allen E. Puckett Professor and Professor of Electrical Engineering, California Institute of Technology.

(1997-1999) Allen E. Puckett Professor and Professor of Electrical Engineering; Executive Officer for Electrical Engineering, California Institute of Technology.

(1990–1997) Professor of Electrical Engineering and Executive Officer for Electrical Engineering, California Institute of Technology.

(1982–1990) Professor, Department of Electrical Engineering, California Institute of Technology.

(1978–present) Consultant, Communications Research, Jet Propulsion Laboratory, California Institute of Technology.

(1978–1982) Professor of Mathematics and Research Professor, Coordinated Science Laboratory, University of Illinois, Urbana, Illinois.

(1972–1976) Visiting Lecturer, California Institute of Technology, Pasadena, California.

(1970–1978) Supervisor, Information Processing Group, Communications Systems Research Section, Jet Propulsion Laboratory, Pasadena, California.

(1967–1970) Research Engineer, Information Processing Group, Communications Systems Research Section, Jet Propulsion Laboratory, Pasadena, California.

(1963–1967) Math Assistant, Information Processing Group, Communications Systems Research Section, Jet Propulsion Laboratory, Pasadena, California.

Honors and Awards

Erdös number one: "Ramsey Bounds for Graph Products" (with Paul Erdös and Herbert Taylor), *Pac. J. Math.* 37 (1971), pp. 45–46.

NASA Group Achievement Award for Voyager Mission Operations Systems Design and Development, June 1981.

Elected Fellow, IEEE, 1984

Elected President of the IEEE Information Theory Group (one-year term of office, 1984)

Associated Students of the California Institute of Technology Award for Excellence in Teaching, 1985, 1989, 1990, 1999.

Caltech Graduate Student Council Teaching Award, 1996.

Paper "New Upper Bounds on the Rate of a Code via the Delsarte-MacWilliams Inequalities," selected for an Information Theory Society Golden Jubilee Award, 1998.

NASA Group Achievement Award for the Advanced Error-Correcting Code Research and Development Team, June 1992. ("In recognition of research and development resulting in a new error-correcting system providing an increase of data rate by a factor of 1.6 to benefit all future space missions")

Elected to National Academy of Engineering, 1998.

Paper "Turbo Decoding as an Instance of Pearl's 'Belief Propagation' Algorithm" awarded the 1998 Leonard G. Abraham Prize paper Award.

Recipient of an IEEE Third Millennium Medal.

Patents

U.S. Patent No. 6,233,711 B1 "Turbo coding, decoding devices and turbo coding, decoding methods."

Professional Memberships and Activities

Institute of Electrical and Electronics Engineers

American Mathematical Society

American Society of Engineering Education

National Academy of Engineering

Research Interests

Information theory, error correcting codes, iterative algorithms, space communications, communication networks, discrete mathematics.