

Roy S. Rubinstein

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Education

1988 Ph.D. in Computer Science, Northeastern University
1980 M.S. in Computer Science, Iowa State University
1977 B.A. in Electrical Engineering, Johns Hopkins University
Also completed requirements for B.A. in
Social and Behavioral Sciences Area.

Corporate Experience

1996 to present

Corporate Educator and Consultant

Taught a wide range of corporate courses, including: modules of Boston University's Web Application Developer, Web Design, Unix System Administration and Client/Server certificate programs; Clark University's Client/Server certificate program; on-site training includes classes at Digital Equipment Corporation (now part of Hewlett-Packard), GTE, SAP, IBM, Newegg, State Street, EMC, RSA Security, W.W. Grainger, Metavante, CorPay Solutions, Unitrode (now part of Texas Instruments), Eastman Chemical, and APC; and other technical seminars.

Authored course materials for courses in Java, JavaScript, CGI/Perl, and Korn Shell Programming.

Consulted on and performed contract programming in several areas, including server-side and client-side Internet programming, object-oriented programming and databases. Recent work includes extensive use of PHP, JavaScript and HTML/CSS.

Corporate courses taught (listed by area – some subjects listed more than once as they fall into more than one area):

Programming: Java, JavaScript, C, Unix Shells, Perl, Visual Basic, QBasic, VBScript, PowerBuilder, SQL, HTML

Web Development: Java, JavaScript, VBScript, HTML, CGI/Perl, ASP

Database Development: SQL, Visual Basic for Database Applications, PowerBuilder, Relational Database Design, Access
Unix: Unix Fundamentals, Unix Shell Programming (several), Unix System Administration, C
Security: RSA enVision (several courses)

1980–1981 **Bell Telephone Laboratories** Member of the Technical Staff

College/University Teaching Experience

2006 **New England Institute of Art**
Part-Time Faculty, Interactive Media Design Dept.

1997–2001 **University of Massachusetts Lowell**
Adjunct Associate Professor, Computer Science Dept.

1989–1996 **Worcester Polytechnic Institute**
Assistant Professor, Computer Science Dept.

Summer 1990 **Universität Ulm** (Germany)
Visiting Professor, Abt. Theoretische Informatik

1988–1989 **Northeastern University**
Assistant Professor, College of Computer Science

1986–1988 **Northeastern University**
Graduate Assistant, College of Computer Science

1978–1980, 1981–1986 **Iowa State University**
Graduate Assistant, Dept. of Computer Science

College/university courses taught (under various names):

Computer Programming (several, in several languages),
Data Structures and Algorithms, Modern Programming Concepts,
Principles of Programming Languages, Compiler Design,
Languages and Language Processors, Web Design &
Development (several levels), Discrete Structures (graduate and
undergraduate), Automata Theory (graduate and undergraduate),
Computability (graduate and undergraduate),
Complexity Theory (graduate)

Independent studies directed:

Cryptography, HTML and WWW Pages, Chaos and Fractals,
Computer-Aided Harmony

Theses and projects advised:

A Comprehensive Examination of Automata Theory – A Survey,
Masters Thesis by Paul Maguire, 1994.

Recursive Adaptable Grammar, Masters Thesis by John Shutt, 1993.

Also advised dozens of undergraduate projects, each equivalent in work and credit to at least three courses. Topics include computers and music (many!), data compression, cryptography, virtual reality, computers and theatre, computer controlled lighting, and others.

A complete list is available on request.

Programming Language Experience

Languages used:

ALGOL-60, APL, assembly (several), awk, BASIC (including QBasic, BASIC-PLUS, and Visual Basic), C, C++, C#, csh, DCL, DIBOL, FORTRAN (FORTRAN IV and FORTRAN 77), HTML, Icon, Java, JavaScript, JCL, ksh, LaTeX, lex, LISP, LSL, Modula, nroff, Pascal, Perl, PHP, PL/I (and PL/C), PostScript, PowerScript, Prolog, RUNOFF, Scheme, sh, SNOBOL, SQL, TeX, VBScript, yacc

Languages taught:

ALGOL-60, APL, BASIC (QBASIC and Visual Basic), C, FORTRAN (FORTRAN IV and FORTRAN 77), HTML, Java, JavaScript, ksh, LISP, Pascal, Perl, PL/C, PowerScript, Scheme, sh, SNOBOL, SQL, VBScript

Additional Programming Language Experience:

Taught Modern Programming Concepts, Principles of Programming Languages, and Compiler Design at the college level (see College/University Teaching Experience above), and the area of concentration for my Masters degree was programming languages and compilers.

Refereed Publications

"Self-Modifying Finite Automata: An Introduction" (with J. Shutt)
Information Processing Letters, 1995.

"Computer Science Projects with Music"
Proc. ACM SIGCSE Technical Conference on Computer Science Education, 1995.

"A Virtual Reality World Builder" (with C. Council, E. Felton, C. Johnson, R. Mason, C. Wills)
Convergence: The Fifth Biennial Symposium on Arts and Technology, 1995.

"Self-Modifying Finite Automata" (with J. Shutt)
Technology and Foundations: Information Processing '94 Vol. I:
Proc. 13th IFIP World Computer Congress, 1994.

"Separating Complexity Classes with Tally Oracles" (with L. Hemachandra)
Theoretical Computer Science, 1992.

"Self-P-Printability and Polynomial Time Turing Equivalence to a Tally Set"
SIAM Journal on Computing, 1991.

"A Note on Relativizing Complexity Classes with Tally Oracles" (with L. Hemachandra)
Proc. Fifth Annual Structure in Complexity Theory Conference, 1990.

"P-Printable Sets" (with E. Allender)
SIAM Journal on Computing, 1988.

Selected Other Papers

Self-Modifying Finite Automata -- Basic Definitions and Results} (with J. Shutt)
Worcester Polytechnic Institute technical report WPI-CS-TR-95-2, 1995.

Music Related Computer Science MQP's
Worcester Polytechnic Institute technical report WPI-CS-TR-93-3, 1993.

Relativizations of the P-Printable Sets and the Sets with Small Generalized Kolmogorov Complexity
Worcester Polytechnic Institute technical report WPI-CS-TR-92-5, 1992.

Structural Complexity Classes of Sparse Sets: Intractability, Data Compression and Printability
Northeastern University, Ph.D. Thesis, 1988.

Immunity for Generalized Kolmogorov Complexity Classes
Northeastern University technical report NU-CCS-86-2, 1986.

A Syntax-Directed Translation from Modula into PL/I
Iowa State University Masters paper, 1980.

Professional Activities

Referee/Reviewer Mathematical Systems Theory
Journal of Computer and System Sciences
SIAM Review
Information Processing Letters
Addison-Wesley (textbooks)

Technical Session Chair The 13th IFIP World Computer Congress, 1994

Memberships Association for Computing Machinery
Massachusetts Business Association
Phi Kappa Phi honor society
Alpha Psi Omega dramatic honor fraternity

Non-Computer Science Publications, Credits, etc.

The New England Pop Music Festival. Founder and organizer, 2004 to present.

Rocker magazine. Contributing photographer, 2011 to present.

I'm Saving Myself for Shepherdess album by Shepherdess, 2013. Recording engineer for song "Without a Warning."

ThirdThursdays @ The Rosebud music series. Founder and organizer, 2010 to 2012.

The Sound of Our Town: A History of Boston Rock & Roll by Brett Milano, Commonwealth Editions, 2007. Includes six of my photographs.

Rock Shots, Volume I photography exhibit at The Abbey Lounge, Somerville, MA, 2006.

A Woman's Voice: We All Got Somethin' compact disc produced by Robin Lane, 2005. Recording engineer and CD artwork.

A Woman's Voice: Song To Us compact disc produced by Robin Lane, 2004. CD artwork.

Giving Youth a Voice: Music from The Hot Spot compact disc produced by Robin Lane, 2002. Recording engineer, mixing engineer, and CD artwork.

Catbird Seat compact disc by Robin Lane, 1995. Original photograph included in the liner notes.

A View from the Tower play presented by WPI Masque as part of New Voices 14, 1996. (refereed)
Also presented as part of New Voices 14.5.

Phone Tag: A Love Story play presented by WPI Masque as part of New Voices 14, 1996. (refereed)

No Offense Intended play presented by WPI Masque as part of New Voices 13, 1995. (refereed)

Where's the Cheese? play presented by WPI Masque as part of New Voices 12, 1994. (refereed)