

ALBERT R. MEYER
Curriculum Vitae

Hitachi America Professor of Engineering
Dept. of Electrical Engineering and Computer Science
Massachusetts Institute of Technology

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Research interests: Technology for Active Learning.
Earlier work in
Logic and Semantics of programs and concurrent processes;
Computational Complexity
including specification of the *polynomial-time hierarchy*.

HISTORY OF M.I.T. APPOINTMENTS:

Hitachi America Professor of Engineering	Jan., 1991	present
Full Professor	July, 1975	present
Cecil H. Green Professor	Sept., 1982	Sept., 1983
Associate Director, Lab. for Computer Science	July, 1978	July, 1981
Associate Professor	July, 1972	July, 1975
Assistant Professor	July, 1969	July, 1972

NON-M.I.T. EXPERIENCE:

- University of Chicago, Visiting Professor, 1/86.
- Eidgenossische Technische Hochschule (Zurich), visiting Scientist, 7/79.
- Harvard Univ., Visiting Professor, Division of Applied Science, 9/78–6/79.

- IBM Watson Research Center, visiting Researcher in Mathematics, 1/75–8/75.
- Univ. of Warwick (England), Visiting Researcher in Computer Science, 6/72–8/72.
- Univ. of California at Berkeley, Research Associate (Electrical Engineering), 6/71–7/71.
- Carnegie-Mellon Univ., Assistant Professor of Computer Science, 7/67–7/69.
- IBM Watson Research Center, Visiting Researcher in Comp. Sci., 1/67–6/67; 8/66–9/66.

EDITORIAL SERVICE, GOVERNMENT COMMITTEES, ETC.:

- Editor-in-Chief, *Information and Computation*, 1982–
- Managing Editor, *Annals of Pure and Applied Logic*, 1989–1999
- Associate Editor, *SIAM J. Computing*, 1981–1999
- Editor, *J. Computer and System Sciences*, 1976–
- Associate Editor, *Theoretical Computer Science*, 1975–2001
- Co-editor, MIT Press Foundations of Computation Series, 1987–
- Member, MIT Press Editorial Board, 1987–2000
- Member, MIT Press Computer Science Editorial Board, 1976–1987, 1992–1999
- Co-Chair and Program Committee member, Int'l. Conf. on Theoretical Aspects of Computer Software, Sendai, Japan, Sept., 1991; April, 1994; Fall, 1996

Other (since 1990):

- Member, Organizing Committee, IEEE Symp. Logic in Computer Sci., 1985–1999.
- Member, Program Committee, Int'l Conf. Typed Lambda Calculi and Applications, Edinburgh, Scotland, April 1995.
- Member, Program Committee, 1st Workshop on Principles and Practice of Constraint Programming, Newport, RI, April, 1993.
- Editor, *Advances in Applied Mathematics*, 1980–1993
- Member, Advisory Board of the Software Verification Research Centre, The University of Queensland, 1989–1993
- Chair, Special Session on Full Abstraction, 3rd Jumelage Workshop, Math. Sciences Institute, Cornell, Oct., 1992.

- Founding moderator of three email research forums “TYPES,” “LOGIC (in Computer Science),” and “CONCURRENCY,” 1985–1992.
- Member, Program Committee, Mathematical Foundations of Computer Science '92, Prague, Aug., 1992.
- Member, Organizing Committee, Symp. on Logical Foundations of Computer Science, Tver, USSR, July, 1992.
- Editorial Adviser, *Handbook of Logic in Computer Science*, Oxford Univ. Press, 1987–1990
- Member, NSF Computer Science Advisory Board, 1989–1991.
- General Chair, IEEE Symp. Logic in Computer Science, 1988–1991.
- Chair, Trakhtenbrot 70th Birthday Symposium, Tel Aviv, Israel, June, 1991.
- Advisory Board, *Handbook of Theoretical Computer Science*, J. van Leeuwen, ed., Elsevier/North-Holland, 1985–1990.
- Member, Program Committee, Kleene '90 Logic Symposium, Chaika, Bulgaria, June, 1990.

CONSULTING RECORD (since 1991):

- Research Advisory Board, Hitachi America Corporation, October, 1991–present

EDUCATION:

Harvard Univ.	Ph.D.(Applied Mathematics)	January, 1972
Harvard Univ.	M.S. (Applied Mathematics)	June, 1965
Harvard College	A.B. (<i>cum laude</i>)	June, 1963

PROFESSIONAL MEMBERSHIPS:

American Academy of Arts and Sciences—elected, May, 1987; Association for Computing Machinery; Association for Symbolic Logic; Institute of Electrical and Electronic Engineers; Mathematics Association of America; Society for Industrial and Applied Mathematics

Publications

Books

1. Ito, T., and A.R. Meyer, eds., “Theoretical Aspects of Computer Software, Proceedings of an International Symposium” Springer-Verlag, Lecture Notes in Comp. Sci. 526, September, 1991.
2. Meyer, A.R., J. Guttag, R. Rivest, and P. Szolovits, eds., “Research Directions in Computer Science: An MIT Perspective,” MIT Press, Cambridge Mass., 1991, 490pp.
3. Meyer, A.R. and M.A. Taitlin, eds., “Logic at Botic,'89: Proceedings of a Symposium on Logical Foundations of Computer Science,” Springer-Verlag, Lecture Notes in Comp. Sci. 363, July, 1989.

Refereed Publications

1. Stockmeyer, L. and A.R. Meyer, "Cosmological lower bound on the circuit complexity of a small problem in logic," JACM 49, 6 (2002), 753 - 784.
2. Meyer, A.R. and A. Rabinovich. "Valid Identity Problem for Shuffle Regular Expressions," J. Automata, Languages, and Combinatorics 7 (2002), 109–125.
3. Jim, T. and A.R. Meyer, "Full Abstraction and the Context Lemma," SIAM J. Computation 25, 3 (1996), 663–696.
4. Jategaonkar, L. and A.R. Meyer, "Deciding True Concurrency Equivalences on Finite Safe Nets," Theoretical Computer Science, 154 (Jan. 1996), 107–143.
5. Seiferas, J.I. and A.R. Meyer, "Characterization of Realizable Space Complexities," Ann. Pure and Applied Logic, 73 (1995), 171–190.
6. Bloom, B., S. Istrail, and A.R. Meyer, "Bisimulation Can't Be Traced," J. ACM, 42, 1 (1995), 232–268.
7. Breazu-Tannen, V. and A.R. Meyer, "Conservativity of equational theories in typed lambda calculi," Fund. Informaticae 19 (1993), 1–49.
8. Bloom, B. and A.R. Meyer, "Experimenting with Process Equivalence." Theoretical Computer Science, 101(2) (1992), 223–237.
9. Bruce, K.B., A.R. Meyer and J.C. Mitchell, "The Semantics of Second-Order Lambda Calculus," Information and Computation, 85 (1990), 76–134. Reprinted in: Gerard Huet, editor. *Logical Foundations of Functional Programming*, chapter 10, pages 213–272. University of Texas at Austin Year of Programming Series. Addison-Wesley Publishing Company, 1990.
10. Halpern, J.Y., M.C. Loui, A.R. Meyer, and D. Weise, "On Time Versus Space III", Math. Systems Th. 19 (1986), 13–28.
11. Parikh, R., A. Chandra, J. Halpern, and A.R. Meyer, "Equations between Regular Terms and an Application to Process Logic," SIAM J. Comp. 14 (1985), 935–942.
12. Sistla, A.P., E.M. Clarke, N. Francez, and A.R. Meyer, "Can Message Buffers be Axiomatized in Linear Temporal Logic?", Information and Control 63 (1984), 88–112.
13. Meyer, A.R. and J. Tiuryn, "Equivalences Among Logics of Programs," J. Computer and System Sciences, 29,2 (1984), 160–169.
14. Meyer, A.R. and J.C. Mitchell, "Termination Assertions for Recursive Programs: Completeness and Axiomatic Definability," Information and Control, 56,1/2 (1983),112–138.
15. Meyer, A.R., "What is a Model of the Lambda Calculus?", Information and Control, 52,1 (1982), 87–122.
16. Mayr, E. and A.R. Meyer, "The Complexity of the Word Problems for Commutative Semigroups and Polynomial Ideals," Advances in Mathematics, 46,3 (1982), 305–329.

17. Fischer, M.J., A.R. Meyer and M.S. Paterson, " $\Omega(n \log n)$ Lower Bounds on Length of Boolean Formulas," *SIAM J. Computing*, 11,3 (1982), 416–427.
18. Meyer, A.R. and J.Y. Halpern, "Axiomatic Definitions of Programming Languages: A Theoretical Assessment," *J. ACM*, 29, 2 (1982), 555–576.
19. Meyer, A.R. and K. Winklmann, "Expressing Program Looping in Regular Dynamic Logic," *Theoretical Computer Science*, 18,3 (1982), 301–323.
20. Meyer, A.R., and R. Parikh, "Definability in Dynamic Logic," *J. Computer and System Science*, 23,2 (1981), 279–298.
21. Mayr, E. and A.R. Meyer, "The Complexity of the Finite Containment Problem for Petri Nets," *J. ACM* 28, 3 (July, 1981), 561–576.
22. Greif, I. and A.R. Meyer, "Specifying the Semantics of While-Programs," *ACM Trans. Programming Lang. and Systems*, 3,4 (1981), 484–507.
23. Rivest, R.L., A.R. Meyer, D. Kleitman, K. Winklmann and J. Spencer, "Coping with Errors in Binary Search Procedures," *J. Computer and System Science*, 20,3 (June, 1980), 396–404.
24. Bruss, A. and A.R. Meyer, "On Time-Space Classes and Their Relation to the Theory of Real Addition", *Theoretical Computer Science*, 11,1 (May, 1980), 59–70.
25. Seiferas, J., M.J. Fischer and A.R. Meyer, "Separating Nondeterministic Time Complexity Classes," *J. ACM*, 25,1 (1978), 146–167.
26. Lynch, N., A.R. Meyer and M.J. Fischer, "Relativization of the Theory of Computational Complexity," *Trans. Amer. Math. Soc.*, 220 (1976), 243–287.
27. Moll, R. and A.R. Meyer, "Honest Bounds for Complexity Classes of Recursive Functions," *J. of Symb. Logic*, 39,1 (1974), 127–138.
28. Helm, J., A.R. Meyer and P. Young, "On Orders of Translations and Enumerations," *Pacific J. Math.* 46, 1 (1973), 185–195.
29. Meyer, A.R. and D.M. Ritchie, "A Classification of Recursive Functions," *Zeits. Math. Log. und Grund. d. Math.*, 18, 1 (1972), 55–68.
30. Meyer, A.R., "Program Size in Restricted Programming Languages," *Information and Control*, 21, 4 (1972), 382–394.
31. Fischer, P.C., A.R. Meyer and A.L. Rosenberg, "Real-time Simulation of Multi-head Tape Units," *J. ACM*, 19, 4 (1972), 591–607.
32. Meyer, A.R. and P.C. Fischer, "Computational Speed-up by Effective Operations," *J. Symb. Logic*, 37, 1 (1972), 55–68.
33. Fischer, P.C., A.R. Meyer and A.L. Rosenberg, "Time Restricted Sequence Generation," *J. Comp. Sys. Sci.*, 4, 1 (1970), 50–73.

34. Meyer, A.R., “A Note on Star-Free Events,” J. ACM 16, 2 (April, 1969), 220–225.
35. Meyer, A.R. and C. Thompson, “Remarks on Algebraic Decomposition of Automata,” Mathematical Systems Theory, 3, 2 (1969), 110–118.
36. Even, S. and A.R. Meyer, “Sequential Boolean Equations,” IEEE Trans. Elec. Computers, C-18, 3 (1969), 230–240.
37. Fischer, P.C., A.R. Meyer and A.L. Rosenberg, “Counter Machines and Counter Languages,” Mathematical Systems Theory, 2, 3 (1968), 265–283.
38. Even, S. and A.R. Meyer, “Test for Planarity of a Circuit Given by an Expression,” IEEE Trans. on Elec. Computers, EC-15, 3 (June, 1966), 372–375.

**Invited Papers and Major Conference Papers
(Not including subsequently published papers.)**

1. Jategaonkar, L. and A. R. Meyer, “Self-Synchronization of Concurrent Processes (Preliminary Report),” to 8th IEEE Symp. Logic in Computer Science, Montreal (June, 1993).
2. Cosmadakis, S.S., A.R. Meyer and J.G. Riecke, “Completeness for Typed Lazy Inequalities,” 5th IEEE Symp. Logic in Computer Science (June, 1990), 312–320.
3. Bloom, B. and A.R. Meyer, “A Remark on the Bisimulation of Probabilistic Processes,” Proc. Logic at Botoc ’89 (July, 1989), Meyer and Taitlin, eds., Springer-Verlag, Lecture Notes in Comp. Sci. 363, 26–40.
4. Meyer, A.R. and J. Riecke, “Continuations May Be Unreasonable,” ACM Conf. Lisp and Functional Programming (July, 1988), 63–71.
5. Meyer, A.R. and S. Cosmadakis, “Semantical Paradigms: Notes for an Invited Lecture,” 3rd IEEE Symp. Logic in Computer Science (July, 1988), 236–253.
6. Meyer, A.R. and K. Sieber, “Towards Fully Abstract Semantics for Local Variables: Preliminary Report,” 15th ACM Symp. POPL (Jan., 1988), 191–203.
7. Breazu-Tannen, V. and A.R. Meyer, “Computable Values can be Classical,” 14th ACM Symp. POPL (Jan., 1987), 238–245. Reprinted in: Gerard Huet, editor. *Logical Foundations of Functional Programming*, chapter 12, pages 285–295. University of Texas at Austin Year of Programming Series, Addison-Wesley Publishing Company, 1990.
8. Meyer, A.R., J.C. Mitchell, E. Moggi, R. Statman, “Empty Types in Polymorphic Lambda Calculus” 14th ACM Symp. POPL (Jan., 1987), 253–262. Reprinted in: Gerard Huet, editor. *Logical Foundations of Functional Programming*, chapter 11, pages 273–284. University of Texas at Austin Year of Programming Series. Addison-Wesley Publishing Company, 1990.
9. Meyer, A.R., “Floyd-Hoare Logic Determines Semantics,” IEEE Symp. Logic in Computer Science (June, 1986), 44–48.

10. Meyer, A.R. and M.B. Reinhold, “‘Type’ is Not a Type,” 13th ACM Symp. POPL (Jan., 1986), 287–295.
11. Breazu-Tannen, V. and A.R. Meyer, “Lambda Calculus with Constrained Types,” Logics of Programs (June, 1985), Springer-Verlag, Lecture Notes in Comp. Sci. 193, 23–40.
12. Meyer, A.R. and M. Wand, “Continuation Semantics in Typed Lambda Calculi (Summary),” Logics of Programs (June, 1985), Springer-Verlag, Lecture Notes in Comp. Sci. 193, 219–224.
13. Mitchell, J.C. and A.R. Meyer, “Second-order Logical Relations,” Logics of Programs, June, 1985, Springer-Verlag, Lecture Notes in Comp. Sci. 193, 225–236.
14. Halpern, J.Y., A.R. Meyer, and B.A. Trakhtenbrot, “The semantics of local storage, or what makes the free-list free? (Preliminary Report),” 11th ACM Symp. POPL (Jan., 1984) 245–257, MIT/LCS/TM-258 (April, 1984), 19pp.
15. Trakhtenbrot, B.A., J.Y. Halpern, and A.R. Meyer, “From Denotational to Operational and Axiomatic Semantics for Algol-like Languages: An Overview,” MIT/LCS/TM-246, (Oct., 1983) 25pp; Logics of Programs, Proceedings, 1983, June 6–8, 1983, Pittsburgh, PA, Lecture Notes in Comp. Sci. 164, Springer Verlag, New York, Clarke and Kozen, eds., 474–500.
16. Meyer, A.R., “Understanding Algol: A View of a Recent Convert to Denotational Semantics,” MIT/LCS/TM-245, (Oct., 1983), 15pp; INFORMATION PROCESSING 83, Mason, R.E.A., ed., Elsevier Science Publishers B. V. (North-Holland), 951–961.
17. Meyer, A.R., Streett, R.S., and Mirkowska, G., “The Deducibility Problem in Propositional Dynamic Logic,” 8th Int’l. Coll. Automata, Languages and Programming, July, 1981, Haifa, Israel, Lecture Notes in Comp. Sci. 115, Springer-Verlag, 238–248; reprinted in Engeler, E. (ed.), Logic of Programs Proceedings, Lecture Notes in Comp. Sci. (1981) 125 Springer-Verlag, 12–22.
18. Meyer, A.R. and K. Winklmann, “The Fundamental Theorem of Complexity Theory,” in Advanced Course on Foundations of Computer Science, Amsterdam 1978, MC Tract 108, FOCS III Mathematisch Centrum, Amsterdam, 1979, 97–112.
19. Meyer, A.R. and M. Shamos, “Time and Space,” in Perspectives on Computer Science, Anita Jones ed., Academic Press, N.Y., 1977, 125–146.
20. Harel, D., A.R. Meyer, and V. Pratt, “Computability and Completeness in Logics of Programs: Preliminary Report,” 9th ACM Symp. on Theory of Computing, Boulder, Colorado, (May, 1977), 261–268. Revised version, M.I.T. Lab. for Computer Science TM97, (Feb., 1978), 16 pp.
21. P.A. Bloniarz, M.J. Fischer, and A.R. Meyer, “A Note on the Average Time to Compute Transitive Closures,” in 3rd Int’l. Coll. Automata, Languages and Programming, S. Michaelson and R. Milner, eds., Edinburgh Univ. Press, 1976, 425–434.
22. Meyer, A.R., “Computational Complexity,” Encyclopedia of Computer Science, Ralston and Meek (ed.), Mason/Charter, N.Y. (1976), 241–245.

23. Meyer, A.R., "Weak Monadic Second Order Theory of Successor is not Elementary-Recursive," Logic Colloquium, Lecture Notes in Mathematics 453, Springer-Verlag, N.Y., (1975), 132–154.
24. Meyer, A.R., "The Inherent Computational Complexity of Theories of Ordered Sets," in *Proc. Int'l. Cong. of Mathematicians*, August 21–29, 1974, vol. 2, 477–482.
25. Paterson, M.S., M.J. Fischer, and A.R. Meyer, "An Improved Overlap Argument for On-Line Multiplication," *Complexity of Computation*, SIAM-AMS Proc., VII, (1974), 97–112.
26. Stockmeyer, L. and A.R. Meyer, "Word Problems Requiring Exponential Time," *5th ACM Symp. on Theory of Computing*, (May, 1973), 1–10.
27. Meyer, A.R. and L. Stockmeyer, "The Equivalence Problem for Regular Expressions with Squaring Requires Exponential Space," *13th IEEE Symp. on Switching and Automata Theory*, (Oct., 1972), 125–129.
28. Meyer A.R. and A. Bagchi, "Program Size and Economy of Description," *4th ACM Symp. on Theory of Computing*, (May, 1972), 183–187.
29. Vilfan, B. and A.R. Meyer, "The Length of Boolean Expressions," *6th Annual Princeton Conference on Information Sciences and Systems*, Dept. of Electrical Engineering, Princeton (1972), 208–211.
30. Meyer, A.R. and E.M. McCreight, "Computationally Complex and Pseudo-Random Zero-One Valued Functions," *Proc. Int'l. Symp. on Theory of Machines and Computation*, ed. Z. Kohavi and A. Paz, Academic Press, N.Y., (1971), 19–52.
31. Meyer, A.R. and M.J. Fischer, "Economy of Description by Automata, Grammars, and Formal Systems," *12th IEEE Symp. on Switching and Automata Theory*, (1971), 188–191.
32. Fischer, M.J. and A.R. Meyer, "Boolean Matrix Multiplication and Transitive Closure," *12th IEEE Symp. on Switching and Automata Theory*, (1971), 129–131.
33. McCreight, E.M., and A.R. Meyer, "Classes of Computable Functions Defined by Bounds on Computation," *1st ACM Symp. Theory of Computing*, (May, 1969), 79–88.
34. Meyer, A.R. and E.M. McCreight, "Properties of Bounds on Computation," *Proc. 3rd Princeton Conf. Information Sciences and Systems*, (1969), 154–156.
35. Meyer, A.R., "Theories of Computational Complexity," *Computer Science Research Review*, Carnegie-Mellon Univ., Pittsburgh, PA, (Dec. 1968), 17–22.
36. Meyer, A.R. and D.M. Ritchie, "The Complexity of Loop Programs," *Proc. 22nd National ACM Conf.*, Thompson, Washington, D.C., (Aug., 1967), 465–470. (Awarded prize for best paper.)

Other Publications (Selected) (Not including subsequently published papers.)

1. Fisher, M.J., A.R. Meyer, and M.S. Paterson, “Think-a-Dot,” Yale Univ. Computer Science Dept. memo, YALEU/DCS/TR-1287 (April, 2004), 11pp, <ftp://ftp.cs.yale.edu/pub/TR/tr1287.pdf>
2. Meyer, A.R., “Incompleteness and Undecidability,” Appendix in the text *The Formal Semantics of Programming Languages* by Glynn Winskell, MIT Press, 1993, 337–351.
3. Meyer, A.R., “Stability and Sequentiality”, message to the electronic research forum types@theory.lcs.mit.edu, 17 Jun 89.
4. Meyer, A.R., “Thirteen Puzzles in Programming Logic,” manuscript presented at the Workshop on Formal Software Development: Combining Specification Methods, Nyborg, Denmark, (May, 1984), D. Bjorner, organizer.
5. Meyer, A.R., M.J. Fischer, and R. Ladner, “A Note on the Length of Craig’s Interpolants,” M.I.T. LCS TM 183, October, 1980, 4 pp.
6. Meyer, A.R., “Ten Thousand and One Logics of Programming,” EATCS Bulletin, Jan., 1980, 11–29.
7. Meyer, A.R. and M.S. Paterson, “With What Frequency are Apparently Intractable Problems Difficult?” M.I.T. LCS TM 126, February, 1979, 9 pp.
8. Meyer, A.R. (ed.), “Computational Complexity: A Discussion,” SIGACT News, 6, 2 (April, 1974), 27–56.
9. Meyer, A.R., “Discrete Computation: Theory and Open Problems,” MAC Technical Memorandum 39, (January, 1974), 34 pp.
10. Lind, J. and A.R. Meyer, “A Characterization of Log-Space Computable Functions,” Abstract, SIGACT News, 5, 2 (April, 1973), 17–20.
11. Meyer, A.R., “Weak SIS Cannot Be Decided,” Abstract 72T-E67, Notice of AMS, 19, 5 (August, 1972), p. A-598. Reprint in Recursive Function Theory Newsletter, Univ. of Calif., Berkeley, 2, (July, 1972), p. 6.
12. Fischer, M.J., A.R. Meyer, P. O’Neil and M. Paterson, “A Note on Independence of a Regularity-Preserving Operator,” SIGACT News, No. 4 (Jan., 1970), 3–7.

Invited Lectures (Since 1990)

- Computability Theory Of and With Scheme, Distinguished Lecture, Boston Univ. Dept. of Computer Sci., (Dec. 2003) http://theory.lcs.mit.edu/meyer/Scheme_Theory_handouts.pdf
- “M.J. Fischer, *et al.*, The First Decade: mid-60’s to 70’s,” Fischer Fest (July 12, 2003) in conjunction with ACM POPL (2003). <http://theory.lcs.mit.edu/meyer/fischer-fest.pdf>

- “Teaching Computability Theory Of and With the Programming Language SCHEME,” FLIC Workshop, ACM Int’l Conference on Functional Programming, Philadelphia, May, 1996.
- “1950’s Automata, 1970’s Complexity, and 1990’s Process Theory,” Invited Lecture, Hartmanis and Stearns Turing Award Symposium, SUNY Albany, Mar. 1994, Cornell Univ. Nov. 1994.
- A.R. Meyer, “Concurrent Process Equivalences: Some Decision Problems (Abstract),” Munich Univ., Proc. 12th Symp. Theoretical Aspects of Computer Science (STACS) (1995), 349.
- “Observing Truly Concurrent Processes (Abstract),” Proc. 2nd Symp. Theoretical Aspects of Computer Software (TACS), Sendai, Japan, April, 1994, 886.
- “On Valid Equations in Concurrent Process Algebra,” Jumelage Workshop, SRI Int’l, Palo Alto, Oct. 1993.
- “True Concurrency Semantics, An Overview,” Invited Lecture, 9th Workshop on the Mathematical Foundations of Programming Semantics, Tulane Univ., New Orleans, April, 1993.
- “Full Abstraction and the Context Lemma,” Invited Lecture, Symp. Theoretical Aspects of Computer Software, Sendai, Japan, Sept., 1991; American Jumelage workshop, Bell Labs, Murray Hill, Oct. 1991; MIT Laboratory for Computer Science Seminar, Dec., 1991; Distinguished Lecture, Wesleyan U., Conn., July, 1992.
- “Executions, Algebra, and Logic of Concurrent Processes,” Distinguished Lecture, Dept. of Computer Science, Johns Hopkins Univ., Baltimore, March, 1991; Invited Lecture, Trakhtenbrot 70th Birthday Symposium, Tel-Aviv, June, 1991; Dept. of Computer Science, Yale, January, 1992.
- “Theory of Concurrent Computation by Dataflow,” Invited Lecture, Williams College, Williamstown, Massachusetts, Nov., 1990.
- “Term Rewriting using Structured Operational Semantics,” Invited Lecture, 2nd Int’l. Workshop on Conditional and Term Rewriting Systems, Dept. of Computer Science, Concordia Univ., Montreal, June, 1990.
- “Why Standard Semantics of Lambda Calculus Does Not Model Programming Language Behavior and What To Do About It,” Distinguished Lecture Series, Dept. of Computer Science, UC San Diego, March, 1990.

Ph.D. Theses Supervised

1. Xiong, Rebecca, Dept. of Electrical Engineering and Computer Science, M.I.T., May, 2000.
2. Kučan, Jakov, “Metatheorems about Convertibility in Typed Lambda Calculi: Applications to CPS transform and ‘Free Theorems’,” Dept. of Electrical Engineering and Computer Science, M.I.T., February, 1997.

3. Jim, Trevor, "Principal Typings and Type Inference," Dept. of Electrical Engineering and Computer Science, M.I.T., June, 1996.
4. Jategaonkar, L., "Observing 'True' Concurrency," Dept. of Electrical Engineering and Computer Science, M.I.T., September, 1993.
5. Riecke, J., "The Logic and Expressibility of Simply-typed Call-by-value and Lazy Languages", Dept. of Electrical Engineering and Computer Science, M.I.T., Sept., 1991.
6. Bloom, B., "Ready Simulation, Bisimulation, and the Semantics of CCS-like Languages," Dept. of Electrical Engineering and Computer Science, M.I.T., Aug., 1989.
7. Breazu-Tannen, V., "Conservative Extensions of Type Theories," Dept. of Mathematics, M.I.T., Jan., 1987.
8. Cosmadakis, S.S., "Decision Problems for Functional Dependencies," Dept. of Electrical Engineering and Computer Science, M.I.T., Sept., 1985. (Jointly supervised with P. Kanellakis, Brown U..)
9. Gasarch, I.W., "Recursion Theoretic Techniques in Complexity Theory and Combinatorics," Division of Applied Science, Harvard Univ., June, 1985. (Jointly supervised with H. Lewis, Harvard U..)
10. Berman, P., "The Expressive Power of Deterministic Context-Free Dynamic Logic," Dept. of Mathematics, M.I.T., Jan., 1985.
11. Mitchell, J.C., "Lambda Calculus Models of Typed Programming Languages," Dept. of Electrical Engineering and Computer Science, M.I.T., Sept., 1984.
12. Streett, R., "An Automata Theoretic Decision Method for Propositional Logics of Programs," Dept. of Electrical Engineering and Computer Science, M.I.T., Sept., 1981. (Jointly supervised with V. Pratt, Stanford U..)
13. Halpern, J.Y., "Axiomatic Definitions of Programming Languages and Logics of Programs," Dept. of Mathematics, Harvard Univ., June, 1981. (Jointly supervised with G. Sacks, Harvard U..)
14. Loui, M., "Simulations among Multidimensional Turing Machines," Dept. of Electrical Engineering and Computer Science, M.I.T., Sept., 1980.
15. Levin, L.A. "Algorithmic Information Theory and the Concept of Independence," Dept. of Mathematics, M.I.T., Sept., 1979.
16. Jaffe, J.M. "Parallel Computation on Data Flow Machines," Dept. of Electrical Engineering and Computer Science, M.I.T., June, 1979.
17. Bloniarz, P., "The Complexity of Monotone Boolean functions and An Algorithm for Finding Shortest Paths in A Graph," Dept. of Electrical Engineering and Computer Science, M.I.T., Sept., 1977.
18. Hsieh, W., "On the Size of Expressions," Dept. of Mathematics, M.I.T. Sept., 1974.
19. Seiferas J., "Nondeterministic Time and Space Complexity Classes," Dept. of Electrical Engineering and Computer Science, M.I.T. Sept., 1974.

20. Rackoff, C., "The Complexity of Some Logical Theories," Dept. of Electrical Engineering and Computer Science, M.I.T., Sept., 1974.
21. Ferrante, J., "Some Upper and Lower bounds on the Complexity of Decision Procedures in Logic," Dept. of Mathematics, M.I.T., Sept., 1974.
22. Stockmeyer, L.J., "The Complexity of Decision Problems in Automata Theory and Logic," Dept. of Electrical Engineering and Computer Science, M.I.T., June, 1974.
23. Moll, R., "Complexity Classes of Recursive Functions," Dept. of Mathematics, M.I.T., June, 1973.
24. Lynch, N., "Relativization of the Theory of Computational Complexity," Dept. of Mathematics, M.I.T., June, 1972.
25. Vilfan, B., "The Complexity of Finite Functions," Dept. of Electrical Engineering and Computer Science, March, 1972.
26. Bagchi, A., "Economy of Descriptions and Minimal Indices," Dept. of Electrical Engineering and Computer Science, M.I.T., Jan., 1972.
27. McCreight, E., "Classes of Computable Functions Defined by Bounds on Computation," Computer Science Dept., Carnegie-Mellon Univ., July, 1969.

Ph.D. Thesis Reader

1. Givan, Robert, "Automatic Directed Proof," Dept. of Electrical Engineering and Computer Science, M.I.T., expected June 1996. (Supervised by D. McAllester)
2. Wells, Joe, (tentative title: "Undecidable Properties of Second-Order Types)," Dept./ of Computer Science, Boston Univ., expected January, 1996. (Supervised by Assaf Kfoury)
3. Segala, Roberto, "Verifying Probabilistic Reactive Systems," Dept. of Electrical Engineering and Computer Science, M.I.T., June 1995. (Supervised by N. Lynch)
4. Aditya, Shail Gupta, "Functional Encapsulation and Type Reconstruction in a Strongly-typed, Polymorphic Language," Dept. of Electrical Engineering and Computer Science, M.I.T., February, 1995. (Supervised by Arvind)
5. Bucciarelli, A. "Strongly Stable Domains," Dept. of Computer Science, U. Pisa, December, 1992. (Supervised by G. Longo)
6. Subrahmanyam, R., "Data Abstraction in Programming Language Semantics," Dept. of Computer Science, U. Pennsylvania, November, 1992. (Supervised by V. Breazu-Tannen)
7. Kathail, V., "Implementing Shared Term Rewriting", Dept. of Electrical Engineering and Computer Science, M.I.T., September, 1990. (Supervised by Arvind)

8. Lucassen, J., "Type-checking Fluent Languages", Dept. of Electrical Engineering and Computer Science, M.I.T., September, 1987. (Supervised by D. Gifford)
9. McAllester, D., "ONTIC: A Knowledge Representation System for Mathematics", Dept. of Electrical Engineering and Computer Science, M.I.T., June, 1987. (Supervised by G. Sussman)
10. Buss, J., "Alternating Machines with Oracles", Dept. of Mathematics, M.I.T., Sept., 1986. (Supervised by M. Sipser)
11. Stark, E.W., "Foundations of a Theory of Specification for Distributed Systems", Dept. of Electrical Engineering and Computer Science, M.I.T., Sept., 1984. (Supervised by N. Lynch)
12. Harel, D., "Logics of Programs: Axiomatics and Descriptive Power", Dept. of Electrical Engineering and Computer Science, M.I.T., May, 1978. (Supervised by V. Pratt)
13. Qualitz, J.E., "Equivalence Problems for Monadic Schemas", Dept. of Electrical Engineering, M.I.T., June, 1975. (Supervised by J. Dennis)
14. Wand, M. "Mathematical Foundations of Formal Language Theory", Dept. of Mathematics, M.I.T., Dec., 1973. (Supervised by M. Fischer)
15. Johnson, D.S., "Near-Optimal Bin Packing Algorithms", Dept. of Mathematics, M.I.T., June, 1973. (Supervised by M. Fischer)
16. Linderman, J., "Productivity in Parallel Computation Schemata", Dept. of Electrical Engineering, M.I.T., May, 1972. (Supervised by J. Dennis)
17. Waldinger, R.J., "Constructing Programs Automatically Using Theorem Proving", Dept. of Computer Science, Carnegie-Mellon Univ., 1969. (Supervised by H. Simon)
18. Earley, J., "An Efficient Context-Free Parsing Algorithm", Dept. of Computer Science, Carnegie-Mellon Univ., Aug., 1968. (Supervised by R. Floyd)