# Curriculum Vitæ

## John Case

**March 2009**

College of Arts and Sciences
Computer and Information Sciences Department
103 Smith Hall
University of Delaware
Newark, DE 19716-2586 (USA)

Office Phone: +1-302-831-2714
FAX: +1-302-831-8458
Email: case@cis.udel.edu
URL: http://www.cis.udel.edu/∼case
Home Phone: +1-302-836-4888

**Overview:** Dr. John Case is Professor of Computer Science at the University of Delaware since 1989 and was chair of the department 1989-1994. He is also Affiliated Faculty, Delaware Biotechnology Institute since 2000. Previously he was in the Computer Science Departments of SUNY at Buffalo 1973-1989 and of The University of Kansas 1969-1973. He was Visiting Professor in the School of Computer Science and Engineering at the University of New South Wales, Sydney, Australia, Fall 2001, Visiting Professor of Computer Science at The University of Rochester in NY 1987-1988, Associate Dean in the Faculty of Natural Science and Mathematics at SUNY Buffalo 1985, Visiting Associate Professor of Computer Science at Courant Institute, New York University and Visiting Fellow in Computer Science at Yale University 1980-1981, and a National Science Foundation Graduate Fellow in Mathematics at The University of Illinois 1966-1969.

He is best known for his work in computability-theoretic learning and inductive inference and for his theoretical work involving machine self-reference. He collaborates regularly with international colleagues on three continents besides North America. He is interested in application of his theory work to cognitive science, understanding the reflective component of consciousness, philosophy of science, and applied machine learning. His research also includes the application of computability-theoretic techniques to the study of the structure, succinctness, and complexity of programs — including and especially the complexity of programs that learn. He has been additionally interested in interconnection scheme, processor, and algorithm design for multi-dimensional lattice computers with application to the discretized, analogical representation of motion in space. He recently completed a project with a biologist colleague involving machine learning applied to bioinformatics. He is just beginning a new empirical project on the use of genetic programming to enhance known applied machine learning techniques. He also has recently gotten preliminary results for a new, side, empirical project with another biologist colleague on the learning of communication in the cuttlefish, an intelligent but asocial mollusc.

He is a Founding Editor of the *Journal of Universal Computer Science* and past Treasurer of *Computational Learning Theory, Inc.* which runs the associated conferences.

He has graduated so far twelve Ph.D. students, four of whom are or were full professors at research universities, one of these former head of his school and director of an associated research institute, now a Deputy Vice Chancellor for Research and Commercialization. Two more of his former Ph.D. students are professors at teaching universities. He has also supervised three bioinformatics postdocs.

## EDUCATION

| | | | |
|---|---|---|---|
| University of Illinois, Urbana | Mathematics | Ph.D. | 1966-1969 |
| University of Illinois, Urbana | Mathematics | M.S. | 1964-1966 |
| Iowa State University | Physics (with honors) | B.S. | 1960-1964 |

## PROFESSIONAL APPOINTMENTS

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|---|---|
| 1989 - present | Professor, Computer and Information Sciences Department, University of Delaware |
| 2000 - present | Affiliated Faculty, Delaware Biotechnology Institute |
| 1989 - 1994 | Chair, Computer and Information Sciences Department, University of Delaware |
| Fall 2001 | Visiting Professor, School of Computer Science and Engineering, University of New South Wales, Sydney, Australia |
| 1983-1989 | Professor, Computer Science Department, SUNY at Buffalo |
| 1987-1988 | Visiting Professor, Computer Science Department, University of Rochester, NY |
| 1985 | Associate Dean, Faculty of Natural Sciences and Mathematics, SUNY at Buffalo |
| 1975-1983 | Associate Professor, Computer Science Department, SUNY at Buffalo |
| 1980-1981 | Visiting Fellow, Computer Science Department, Yale University |
| 1980-1981 | Visiting Associate Professor, Computer Science Department, Courant Institute, New York University |
| 1973-1975 | Assistant Professor, Computer Science Department, SUNY at Buffalo |
| 1969-1973 | Assistant Professor, Computer Science Department, University of Kansas/footnote I was offered tenure and promotion at the University of Kansas (UK) but moved to University of Buffalo instead of staying at UK. |

## HONORS AND AWARDS

1966-1969 *National Science Foundation Graduate Fellow* (award by nation-wide competition), Mathematics Department, University of Illinois, Urbana

## PROFESSIONAL ACTIVITIES

A Founding Editor: Journal for Universal Computer Science (1994-present)
Treasurer, Computational Learning Theory, Inc. (2000-2004)
Vice President, Delaware Astronomy Society (2002-present)
Education Associate at Mount Cuba Astronomical Observatory (1998-present)

Program Committees:
Algorithmic Learning Theory (2005, Co-Chair 2004, 1994, 1990)
Computational Learning Theory (2007, 2002, 1997; Chair 1990)
FLAIRS: Special Track on Knowledge Discovery and Data Mining (2001)
European Conference on Computational Learning Theory (1997)
Foundations of Software Technology and Theoretical Computer Science (1997)
Computing and Information (1996, 1995)
Parallel and Distributed Computing (1995)
Analogical and Inductive Inference (1994)

## GRANTS

*Pending* NSF Grant Proposal: Polytime Multi and One Shot Learning. June 1, 2009–May 31, 2012, $422,095, submitted December 2008.

NSF Grant No. CCR-0208616: Self-Reference, Complexity, and Learning. September 1, 2002–August 31, 2006, $164,063.

USDA IFAFS Grant No 01-04145: Computational Analysis of Divergent Genomes by Full-Fledged Analogy. Co-Principal Investigator: Joan Burnside. October 2001–September 2005, $500,000.

Delaware Biotechnology Institute Fellowship: Modular Machine Learning To Identify Chicken Immune System Enhancers. Co-Principal Investigator: Joan Burnside. October 1, 1999–September 30, 2001, $60,000.

Deutscher Akademischer Austausch Dienst: Study Visit. April 15-June 1, 1996, $3,787.

NSF Grant No. CCR-8713846 (no. CCR-8947040 at Delaware): Theory of Machine Learning and Inductive Inference. September 1, 1987–May 30, 1991, $172,697.

NSF Grant No. MCS-8010728: Machine Theory of Program Structure, Self-Reflection, and Inductive Inference. October 1981–October 1984, $58,921.

NSF Grant No. MCS-7704388: Self-Modifying Programs, Inductive Inference, and Abstract Computation Theory. September 1977–May 1979, $40,000.

## REFEREED PUBLICATIONS[1]

John Case and Sam Moelius. Independence Results for $n$-ary Recursion Theorems. Submitted, 2009.

John Case and Sam Moelius. Program Self-Reference in Constructive Scott Subdomains. *Mathematical Theory and Computational Practice - Fifth Conference of Computability in Europe (CiE 2009), Proceedings* Accepted, 2009.

Leonor Becerra-Bonache, John Case, Sanjay Jain, and Frank Stephan. Iterative Learning of Simple External Contextual Languages. *19th International Conference on Algorithmic Learning Theory (ALT'08)*, *Lecture Notes in Artificial Intelligence*, Vol. 5254, Springer-Verlag, Berlin, pages 359-373, October 2008 (journal version invited for and submitted to the associated special issue of *Theoretical Computer Science*).[2]

John Case and Sam Moelius. Optimal Language Learning. *19th International Conference on Algorithmic Learning Theory (ALT'08)*, *Lecture Notes in Artificial Intelligence*, Vol. 5254, Springer-Verlag, Berlin, pages 419–433, October 2008.

John Case and Timo Kötzing. Dynamically Delayed Postdictive Completeness and Consistency in Learning. *19th International Conference on Algorithmic Learning Theory (ALT'08)*, *Lecture Notes in Artificial Intelligence*, Vol. 5254, Springer-Verlag, Berlin, pages 389–403, October 2008.

John Case and Timo Kötzing. Dynamic Modeling in Inductive Inference. *19th International Conference on Algorithmic Learning Theory (ALT'08)*, *Lecture Notes in Artificial Intelligence*, Vol. 5254, Springer-Verlag, Berlin, pages 404–418, October 2008.

John Case and Sam Moelius. U-Shaped, Iterative, and Iterative-with-Counter Learning. *Machine Learning Journal, Special Issue for selected papers from COLT'07*, **72** (2008), 63–88.[3]

Lorenzo Carlucci, John Case, Sanjay Jain, and Frank Stephan. Non U-Shaped Vacillatory and Team Learning. *Journal of Computer and System Sciences*, 74, pp. 409-430, 2008.

Ganesh Baliga, John Case, Wolfgang Merkle, Frank Stephan, and Rolf Wiehagen. When Unlearning Helps. *Information and Computation*, 36, pp. 28-55, 2008.

John Case and Sanjay Jain. Inductive Inference. Invited chapter in *Encyclopedia of Machine Learning* (edited by C. Sammut), Springer, submitted, 2007.

John Case and Sam Moelius. Parallelism Increases Iterative Learning Power. In Marcus Hutter, Rocco Servedio, and Eiji Takimoto, editors, *18th International Conference on Algorithmic Learning Theory (ALT'07)*, *Lecture Notes in Artificial Intelligence*, Vol. 4754, Springer-Verlag, Berlin, pages 41-55, October 2007 (journal version invited for submission to and later accepted, 2008, for the associated special issue of *Theoretical Computer Science*).

John Case, Timo Kötzing, and Todd Paddock. Feasible Iteration of Feasible Learning Functionals. In Marcus Hutter, Rocco Servedio, and Eiji Takimoto, editors, *18th International Conference on Algorithmic Learning Theory (ALT'07)*, *Lecture Notes in Artificial Intelligence*, Vol. 4754, Springer-Verlag, Berlin, pages 26-40, October 2007.

[1] Many journal articles are expansions of conference articles; hence, *these* conference articles may not be separately listed.

[2] For some computer science conferences, a handful of the highest rated papers are invited to have their expanded journal versions submitted to a special journal issue devoted to such papers. These expanded versions undergo normal journal refereeing in addition to the selection process the conference versions underwent first to become conference papers.

[3] Sam Moelius, one of my current Ph.D. students, received for the conference version of this paper the *COLT'07 Fulk Award* for best student co-authored paper.

John Case and Sam Moelius. Properties Complementary to Program Self-Reference. *Proceedings of the 32nd International Symposium on Mathematical Foundations of Computer Science 2007 (MFCS'07)*, In Luděk Kučera and Antonín Kučera, editors, *Proceedings of the 32nd International Symposium on Mathematical Foundations of Computer Science 2007 (MFCS'07)*, *Lecture Notes in Computer Science*, Vol. 4708, Springer-Verlag, Berlin, pages 253-263, August 2007.

John Case and Sam Moelius. Cautious Virus Detection in the Extreme. *Proceedings of the 2007 ACM SIGPLAN Workshop on Programming Languages for Analysis for Security (PLAS'07)*, ACM, NY, NY, pages 47-51, June 2007j

Lorenzo Carlucci, John Case, and Sanjay Jain. Learning Correction Grammars. In Nader Bshouty and Claudio Gentile, editors, *Proceedings of the 20th Annual Conference on Learning Theory (COLT'07)*, *Lecture Notes in Artificial Intelligence*, Vol. 4539, Springer-Verlag, Berlin, pages 203-217, June 2007 (journal version conditionally accepted for *Journal of Symbolic Logic*).

John Case and Sam Moelius. Characterizing Programming Systems Allowing Program Self-Reference. In S. B. Cooper, B. Löwe, and A. Sorbi, editors, *Computation and Logic in the Real World - Third Conference of Computability in Europe (CiE 2007), Proceedings*, volume 4497, *Lecture Notes in Computer Science* pages 125-134, 2007 (journal version accepted for the associated special issue of *Theory of Computing Systems*, 2008).

John Case. Resource Restricted Computability Theoretic Learning: Illustrative Topics & Problems. In S. B. Cooper, B. Löwe, and A. Sorbi, editors, *Computation and Logic in the Real World - Third Conference of Computability in Europe (CiE 2007), Proceedings*, volume 4497, *Lecture Notes in Computer Science*, Springer, Berlin, pages 115-124, invited paper, June 2007 (journal version to appear in the associated special issue of *Theory of Computing Systems*, 2008).

John Case. Directions for Computability Theory Beyond Pure Mathematical. Invited book chapter in *Mathematical Problems from Applied Logic II. New Logics for the XXIst Century* (edited by D. Gabbay, S. Goncharov, and M. Zakharyaschev), International Mathematical Series, Vol. 5, pp. 53-98, Springer, 2007.

Lorenzo Carlucci, John Case, Sanjay Jain, Frank Stephan. Memory-Limited U-Shaped Learning. *Information and Computation*, 205, pp. 1551-1573, 2007.

John Case, Sanjay Jain, Franco Montagna, Giulia Simi, and Andrea Sorbi. On Learning To Coordinate: Random Bits Help, Insightful Normal Forms, and Competency Isomorphisms. *Journal of Computer and System Sciences* (Special Issue for selected learning theory papers from *COLT'03, FOCS'03, and STOC'03*), 71, pp. 308-332, 2005.

Hsing-Kuo Pao and John Case. Computing Entropy for Ortholog Detection. *International Conference on Computational Intelligence (ICCI'04)*, four page extended abstract appears in *International Journal of Computational Intelligence (e-version)*, 2004.

John Case, Sanjay Jain, Eric Martin, Arun Sharma, and Frank Stephan. Identifying Clusters from Positive Data. *SIAM Journal on Computing*, 36, pp. 28-55, 2006.

John Case, Sanjay Jain, Frank Stephan, and Rolf Wiehagen. Robust Learning — Rich and Poor. *Journal of Computer and System Sciences*, 69, pp. 123-165, 2004.

John Case, Sanjay Jain, Rüdiger Reishuk, Frank Stephan, and Thomas Zeugmann. Learning a Subclass of Regular Patterns in Polynomial Time. *Theoretical Computer Science* (Special Issue for selected papers from *ALT'03*), 364, pp. 115-131, 2006.

John Case, Keh-Jiann Chen, Sanjay Jain, Wolfgang Merkle, and James Royer. Generality's Price: Inescapable Deficiencies in Machine-Learned Programs. *Annals of Pure and Applied Logic*, 139, pp. 303-326, 2006.

John Case. Off-Loading Memory To The Environment: A Quantitative Example. *Minds and Machines: Journal for Artificial Intelligence, Philosophy, and Cognitive Science*, 14, pp. 387-389, 2004.

Andris Ambainis, John Case, Sanjay Jain, and Mandayam Suraj. Parsimony Hierarchies For Inductive Inference. *Journal of Symbolic Logic*, 69, pp. 287-328, 2004.

Ying Lin, John Case, Hsing-Kuo Pao, and Joan Burnside. Predicted Secondary Structure Slightly Enhances Ortholog Detection. *Eighth Annual ACM International Conference on Research in Computational Molecular Biology (RECOMB'04)*, 2004.

John Case, Efim Kinber, Arun Sharma, and Frank Stephan. On the Classification of Recursive Languages. *Information and Computation*, 192, pp. 15-40, 2004.

Ming Ouyang, John Case, Vijaya Tirunagaru, and Joan Burnside. 565 Triples of Chicken, Human, and Mouse Candidate Orthologs. *Journal of Molecular Evolution*, 57, pp. 271-281, 2003.

John Case, Matthias Ott, Arun Sharma, and Frank Stephan. Learning To Win Process-Control Games Watching Game-Masters. *Information and Computation*, 174, pp. 1-19, 2002.

John Case, Sanjay Jain, and Mandayam Suraj. Control Structures in Hypothesis Spaces: The Influence on Learning. *Theoretical Computer Science*, 270, pp. 287-308, 2002.

John Case, Sanjay Jain, Susanne Kaufmann, Arun Sharma, and Frank Stephan. Predictive Learning Models for Concept Drift. *Theoretical Computer Science* (Special Issue for *ALT'98*), 268, pp. 323-349, 2001.

John Case, Sanjay Jain, and Arun Sharma. Synthesizing Noise-Tolerant Language Learners. *Theoretical Computer Science* (Special Issue for *ALT'97*), 261, pp. 31-56, 2001.

John Case, Dayanand Rajan, and Anil Shende. Lattice Computers for Approximating Euclidean Space. *J.ACM*, 48(1), 110-144, 2001.

John Case, Keh-Jiann Chen, and Sanjay Jain. Costs of General Purpose Learning. *Theoretical Computer Science*, 259, pp. 455-473, 2001.

John Case and Sanjay Jain. Synthesizing Learners Tolerating Computable Noisy Data. *Journal of Computer and System Sciences*, 62, pp. 413-441, 2001.

Ming Ouyang, John Case, and Joan Burnside. Divide & Conquer Machine Learning For A Genomics Analogy Problem, *Fourth International Conference on Discovery Science 2001 (DS'01)*, Washington, D.C., pages 290-303, volume 2226, *Lecture Notes in Artificial Intelligence*, Springer, Berlin, November 2001.

John Case, Sanjay Jain, Matthias Ott, Arun Sharma, and Frank Stephan. Robust Learning Aided by Context. *Journal of Computer and System Sciences* (Special Issue for *COLT'98*), 60, pp. 234-257, 2000.

John Case, Sanjay Jain, and Frank Stephan. Vacillatory and BC Learning on Noisy Data. *Theoretical Computer Science* (Special Issue for *ALT'96*), 241, pp. 115-141, 2000.

John Case. The Power of Vacillation in Language Learning. *SIAM Journal on Computing*, 28(6), pp. 1941-1969, 1999.

Ganesh Baliga, John Case, and Sanjay Jain. The Synthesis of Language Learners. *Information and Computation*, 152, pp. 16-43, 1999.

John Case, Sanjay Jain, Steffen Lange, and Thomas Zeugmann. Incremental Concept Learning for Bounded Data Mining. *Information and Computation*, 152, pp. 74-110, 1999.

John Case and Mark Fulk. The Existence of Maximal Machine Identifiable Classes. *Journal of Computer and System Sciences*, 58, pp. 211-214, 1999.

John Case and Mandayam Suraj. Inductive Inference of $\Sigma_1^0$-vs. $\Sigma_2^0$-Definitions for Computable Functions. *International Conference on Mathematical Logic*, Novosibirsk, Russia, August 10-15, 1999.

John Case. Machine Self-Reference and Consciousness, *Third Annual Meeting of the Association for the Scientific Study of Consciousness*, London, Ontario, Canada, 1999.

John Case, Susanne Kaufmann, Efim Kinber, and Martin Kummer. Learning Recursive Functions From Approximations. *Journal of Computer and System Sciences* (Special Issue for *EuroCOLT'95*), 55, pp. 183-196, 1997.[4]

John Case, Sanjay Jain, and Arun Sharma. Machine Induction Without Revolutionary Changes in Hypothesis Size. *Information and Computation*, 128, pp. 73-86, 1996.

Ganesh Baliga and John Case. Learnability: Admissible, Co-Finite and Hypersimple Sets. *Journal of Computer and System Sciences*, 53, pp. 26-32, 1996.

John Case, Sanjay Jain, and Arun Sharma. Anomalous Learning Helps Succinctness. *Theoretical Computer Science*, 164, pp.l 13-28, 1996.

John Case, Dayanand Rajan, and Anil Shende. Rotation in Lattice Computers *Eighth International Conference on Computing and Information*, Waterloo, Ontario, June, 1996.

John Case, Sanjay Jain, and Arun Sharma. Complexity Issues for Vacillatory Function Identification. *Information and Computation*, 116, pp. 174-192, 1995.

John Case, Anil Shende, and Dayanand Rajan. Simulating Particle Travel With Lattice Computers. *Eighth International Conference on Parallel and Distributed Computing Systems*, September 21-23, Orlando, Florida, 1995, pp. 488-493.

Ganesh Baliga, John Case, and Sanjay Jain. Language Learning With Some Negative Information. *Journal of Computer and Systems Sciences*, 51, pp. 273-285, 1995.

James Royer and John Case. *Subrecursive Programming Systems: Complexity & Succinctness.* Research Monograph in the Series *Progress in Theoretical Computer Science*, Birkhäuser Boston, 1994.

John Case. Infinitary Self-Reference in Learning Theory. *Journal of Experimental and Theoretical Artificial Intelligence* (invited for Special Issue), 6, pp. 3-16, 1994.

John Case, Dayanand Rajan, and Anil Shende. Representing the Spatial/Kinematic Domain and Lattice Computers. *Journal of Experimental and Theoretical Artificial Intelligence* (invited for Special Issue), 6, pp. 17-40, 1994.

Ganesh Baliga, John Case, Sanjay Jain, and Mandayam Suraj. Machine Learning of Higher Order Programs. *Journal of Symbolic Logic*, 59, pp. 486-500, 1994.

John Case, Sanjay Jain, and Arun Sharma. Vacillatory Learning of Nearly Minimal Size Grammars. *Journal of Computer and System Sciences*, 49, pp. 189-207, 1994.

John Case, Sanjay Jain, and Suzanne Ngo Manguelle. Refinements of Inductive Inference by Popperian and Reliable Machines. *Kybernetika*, 30, pp. 23-52, 1994.

Ganesh Baliga and John Case. Learning with Higher Order Additional Information. *Algorithmic Learning Theory*, Reinhardsbrunn Castle, Germany, pages 64-75 in volume 872 of *Lecture Notes in Artificial Intelligence*, Springer Verlag, Berlin, 1994.

John Case, Dayanand Rajan, and Anil Shende. Spherical Wave Front Generation in Lattice Computers *Journal of Computing and Information*, 1(1), *Special Issue: Sixth International Conference on Computing and Information*, Peterborough, Ontario, Canada, 1994.

John Case, Sanjay Jain, and Arun Sharma. On Learning Limiting Programs. *International Journal of Foundations of Computer Science*, 3, pp. 93-115, 1992.

John Case, Keh-Jiann Chen, and Sanjay Jain. Strong Separation of Learning Classes. *Journal of Experimental and Theoretical Artificial Intelligence*, 4, pp. 281-293, 1992.

[4]Also, the conference version was the highest rated paper at EuroCOLT'95.

John Case. Effectivizing Inseparability, *Zeitschrift für Mathematische Logik und Grundlagen der Mathematik*, 37, pp. 97-111, 1991.[5]

John Case. Learning Machines. Invited book chapter in *Language Learning and Concept Acquisition* (edited by W. Demopoulos and A. Marras), Ablex Publishing Co., 1986.

John Case and Carl Smith. Comparison of Identification Criteria for Machine Inductive Inference. *Theoretical Computer Science*, 25, pp. 193-220, 1983.

John Case. Pseudo-Extensions of Computable Functions. *Information and Control*, 56, pp. 100-111, 1983.

John Case and Christopher Lynes. Machine Inductive Inference and Language Identification. *Automata, Languages and Programming, 9th Colloquium*, Aarhus, Denmark, July 1982, Lecture Notes in Computer Science, volume 140, Springer-Verlag, Berlin, 1982.

John Case and Daniel Moore. The Complexity of Total Order Structures. *Journal of Computer and System Sciences*, 17, pp. 253-269, 1978.

John Case. Sortability and Extensibility of the Graphs of R.E. Partial and Total Orders, *Zeitschrift für Mathematische Logik und Grundlagen der Mathematik*, 22, pp. 1-18, 1976.

John Case. Periodicity in Generations of Automata. *Mathematical Systems Theory*, 8, pp. 15-32, 1974.

John Case. Maximal Arithmetical Reducibilities. *Zeitschrift für Mathematische Logik und Grundlagen der Mathematik*, 20, pp. 261-270, 1974.

John Case. Recursion Theorems and Automata Which Construct. *1974 Conference on Biologically Motivated Automata Theory*, Institute of Electrical and Electronics Engineers, Inc., New York, NY, 1974.

John Case. A Note on Degrees of Self-Describing Turing Machines. *Journal of the Association for Computing Machinery*, 18, pp. 329-338, 1971.

John Case. Enumeration Reducibility and Partial Degrees. *Annals of Mathematical Logic*, 2, pp. 419-439, 1971.

## INVITED PRESENTATIONS

Invited Conference Talks

*Special Session on Computational Learning Theory, Computation and Logic in the Real World - Third Conference of Computability in Europe (CiE 2007)*, June 2007.

*Special Session on Complexity of Algorithms and Computation*, American Mathematical Society Meeting, Santa Barbara, CA, April, 2005.

*Workshop on Computability and Models*, Almaty, Kazakhstan, June 24-28, 2002.

*Australian Knowledge Representation Conventicle*, The University of New South Wales, Sydney, Australia, January 10, 2002.

*Affective Neuroscience Seminar: Selected Topics in Emotion and Consciousness*, Playa Del Carmen, Mexico, January 20, 2000.

*Workshop for German Special Interest Group: Logics in Computer Science*, Kaiserslautern, Germany, May 30, 1996.

*13th Maryland Theoretical Computer Science Day*, University of Maryland, October 6, 1995.

*International GOSLER Workshop on Algorithmic Learning for Knowledge Processing*, Dagstuhl Castle, Germany, November 22-26, 1993.

[5] http://www.cis.udel.edu/∼case/papers/mkdelta.pdf corrects missing set complement signs in definitions in the journal version.

*Third International Workshop on Analogical and Inductive Inference*, Dagstuhl Castle, Germany, October 1992.

*Workshop on Learning and Geometry*, Systems Research Center, Airlie, VA, January 1991.

*Special Session on Mathematical Computer Science*, American Mathematical Society Meeting, Chicago, IL, March 1985.

*Special Year in Mathematical Logic and Theoretical Computer Science: Session on Recursion Theory in Theoretical Computer Science*, University of Maryland, College Park, MD, October 1984

*Workshop on Learnability Theory and Linguistics*, University of Western Ontario, May 1982

*NSF Workshop on Recursion Theory in Computer Science*, Purdue University, May 1981.

Colloquium Talks (in computer science unless noted otherwise)[6]

Brooklyn College, CUNY

Buffalo State College, NY

CUNY Graduate Center

Canisius College, Buffalo, NY

Dortmund University, Germany

George Washington University, DC (Math Department)

Hamilton College, NY

Hochschule für Technik, Wirtschaft und Kultur, Leipzig, Germany

Humboldt University, Berlin, Germany

James Cook University, Cairns, Australia

Kyushu University, Fukuoka, Japan

Millersville University, Millersville, PA

National University of Singapore (School of Computing theory seminar, general colloquium, talk at the Genome Institute of Singapore, and Mathematics Department seminar)

New Mexico State, Las Cruces, NM

New York University (both Computer Science and Mathematical Biology), NY, NY

Pennsylvania State University, University Park, PA

Pohang Institute of Science and Technology, Pohang, South Korea,

Purdue University

RWTH, Aachen, Germany

Rice University, Houston, TX

Rochester Institute of Technology, Rochester, NY

Rutgers University, NJ

Seoul National University, Seoul, South Korea

[6]In some cases talks were given on more than one occasion.

SUNY College at Fredonia

SUNY at Buffalo (Biophysics Department, Buffalo Logic Group, Cognitive Science Group, Computer Science Department, and Semiotics Group)

Syracuse University, Syracuse, NY

Texas Tech University (Mathematics), Lubbock, TX

Union College (both Computer Science and Mathematics), Schenectady, NY

University of Amsterdam, The Netherlands

University of Bonn, Germany

University of Chicago

University of Copenhagen, Denmark

University of Darmstadt, Germany

University of Delaware (Departments of Geography and Mathematical Sciences; the Cognitive Science Group)

University of Heidelberg, Germany

University of Illinois at Chicago

University of Karlsruhe, Germany

University of Kaiserslautern, Germany

University of Kentucky, Lexington, KY

University of Maryland, Baltimore County, MD

University of Maryland, College Park, MD

University of Montreal, Montreal, Quebec, Canada

University of New Hampshire

University of New South Wales (Mathematics), Sydney, Australia

University of Pennsylvania

University of Pittsburgh

University of Latvia, Riga, Latvia

University of Rochester, NY

University of Siena (Mathematics), Italy

University of Texas at El Paso

University of Tver, Russia

University of Waterloo, Waterloo, Ontario, Canada

University of Western Ontario, London, Ontario, Canada

Yale University

## PhD THESES SUPERVISED

Lorenzo Carlucci, *Some Cognitively-Motivated Learning Paradigms in Algorithmic Learning Theory*, Ph.D. 2006 (UD). Assistant Professor (Ricercatore), Department of Computer Science, University of Rome La Sapienza (Rome I), Rome, Italy

Ying Lin, *Development and Assessment of Machine Learning Attributes for Ortholog Detection*, Ph.D. 2006 (UD). Bioinformatics Analyst, GlaxoSmithKline, King of Prussia, PA

Mandayam Suraj, *Theory of Computationally Learned Definitions*. Ph.D. 2001 (UD). Senior Software Engineer, Blair Computing Systems, DE

Ganesh Baliga, *Topics in Computational Learning Theory*. Ph.D. 1993 (UD). Professor, Department of Computer Science, Rowan University of New Jersey

Anil Shende, *Digital Analog Simulation of Uniform Motion in Representations of Physical n-Space by Lattice-Work MIMD Computer Architectures*. Ph.D. 1991 (SUNY/Buffalo). Professor, Mathematics, Computer Science and Physics Department, Roanoke College, VA

Arun Sharma, *Program Size And Teams for Computational Learning*. Ph.D. 1990 (SUNY/Buffalo). Professor of Computer Science and Deputy Vice-Chancellor for Research and Commercialization at Queensland University of Technology, Brisbane, Australia

Mark Fulk, *A Study of Inductive Inference Machines*. Ph.D. 1985 (SUNY/Buffalo). Passed away, May 1997[7]

James Royer, *A Connotational Theory of Program Structure*. Ph.D. 1984 (SUNY/Buffalo). Professor of Computer and Information Science, Syracuse University, NY

Keh-Jiann Chen, *Tradeoffs in Machine Inductive Inference*. Ph.D. 1981 (SUNY/Buffalo). Institute of Information Science, Academica Sinica, Taipei, Taiwan

Gregory Riccardi, *The Independence of Control Structures in Abstract Programming Systems*. Ph.D. 1980 (SUNY/Buffalo). Professor of Computer Science, Florida State University

Carl Smith, *Hierarchies of Identification Criteria for Mechanized Inductive Inference*. Ph.D. 1979 (SUNY/Buffalo). Professor of Computer Science, University of Maryland, College Park. Passed away, July 2004

Daniel Moore, *The Complexity of Total Order Structures*. Ph.D. 1979 (University of Kansas). Qwest, Englewook, CO[8]

## CURRENT PHD SUPERVISION

Timo Kötzing (theory)
Samuel Moelius (theory)
Michael Ralston (genetic programming)

## BIOINFORMATICS POSTDOCS SUPERVISED

Ming Ouyang, Assistant Professor, Computer Engineering & Computer Science Department, University of Louisville, Louisville, KY

Hsing-Kuo Pao, Assistant Professor of Computer Science, National Taiwan University of Science & Technology, Taipei

Lappoon R. Tang, Assistant Professor of Computer Science, University of Texas, Brownsville

## UNIVERSITY SERVICE

[7]When Mark was a faculty member at the University of Rochester, Rochester, New York, one of his Ph.D. students was Sanjay Jain, currently Professor and former Head of the Computer Science Department at National University of Singapore.

[8]When Dan was a faculty member at Ohio State University, one of his Ph.D. students (joint with Harvey Friedman) was Ker-I Ko, currently a Professor of Computer Science at SUNY/Stonybrook.

At UD

Cognitive Science Advisory Committee and Group

A&S Senate (President and Executive Committee)

Computer Resource Planning Committee

A&S College Computing Committee

Committee to Advise on Reorganization of Computer and Network Services

Committee on Information Resource Planning and Management

General Education Committee

At SUNY/Buffalo

Graduate School Policy Committee

Undergraduate Council

Council of Assistant and Associate Deans

Fellow of the Institute for the Minor in Computing and Computing Applications

Faculty of Natural Science and Mathematics Elected Personnel Committee

Math Skills Committee

Committee for Outstanding Senior Awards

Faculty Senate

Faculty Senate Executive Committee

Mathematical Science Representative for Freshman Orientation

Faculty of Natural Science and Mathematics Divisional Committee

Undergraduate and Graduate Grievance Committees