

WAYNE STATE UNIVERSITY

Professional Record

Date Prepared: December 22, 1989

Date Revised: April 21, 2005

NAME: Robert G. Reynolds

OFFICE ADDRESS: 424 State Hall

OFFICE TELEPHONE NO.: (313) 577-0726

HOME ADDRESS: 1064 Beechmont, Dearborn, MI 48124

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DEPARTMENT/COLLEGE: Computer Science/College of Science

PRESENT RANK & DATE OF RANK:

Tenure Awarded, September 1989.
Associate Professor, September 1986.
Full Professor Awarded, September 2000.

WSU APPOINTMENT HISTORY:

Sabbatical Leave Awarded: Fall 2001.
Sabbatical Leave Awarded: Fall 1994 - August 1995
Interim Chair: Computer Science Sept. 1990 - August 1992
Year Appointed/Rank: 1983 Assistant Professor

DATE & PLACE OF BIRTH: 4/28/47, Detroit, MI

CITIZEN OF: U.S.A.

EDUCATION:

Baccalaureate: University of Michigan, Ann Arbor , MI, B. S., 1970.

High School: Pioneer High, Ann Arbor, Michigan, Diploma, June 1966.

Graduate:

University of Michigan, Ann Arbor, MI, Ph.D., Computer Science, 1979.

University of Michigan, Ann Arbor, MI, M.S., Computer Science, 1978.

University of Michigan, Ann Arbor, MI, M.A., Geography, 1972.

FACULTY APPOINTMENTS AT OTHER INSTITUTIONS:

Adjunct Associate Research Scientist, 1994-present, Museum of Anthropology, University of Michigan, Ann Arbor.

Associate Complex Systems Faculty, 1999-present, Center for the Study of Complex Systems, University of Michigan, Ann Arbor.

Visiting Associate Professor, 1981, University of Michigan, Department of Anthropology.

Assistant Professor, 1979 to 1983, Department of Computer Science, Michigan State University.

Teaching Assistant, 1978 to 1979, Department of Computer Science, University of Michigan.

PROFESSIONAL SOCIETY MEMBERSHIP(S):

American Association for the Advancement of Science

American Association of Anthropologists

American Archaeology Association

American Association of Artificial Intelligence

Association for Computing Machinery
Evolutionary Programming Society
International Society for Genetic and Evolutionary Computation
IEEE (Computer Science Section)
SIGART (ACM Special Interest Group on Artificial Intelligence)
SMART (Southeastern Metropolitan Chapter of ACM SIGART).
Society for Design and Process Science

HONORS/AWARDS:

“The Emergence of Complex Hierarchical Hub Social networks in the Mesa Verde Village Simulation Using Cultural Learning” was selected as one of the best papers, FLAIRS 2005 conference. Extended version invited as journal article for International Journal of Artificial Intelligence Tools.

Selected as one of the best papers, NAACDOS 2003. The extended version appears in the Journal of Computational Mathematics and Organizational Theory (CMOT).

Selected as one of the best papers, IEEE ICTAI-99 Conference. Extended version was published in ICTAI Journal.

Best Paper Award, Second Place, AAAI FLAIRS-99 Conference.

Evolutionary Programming Society, Award for efforts as Treasurer of the 1999 International Congress on Evolutionary Computation on Evolutionary Programming, (March 1999).

Wayne State University, College of Science, Excellence in Teaching Award, 1997

Evolutionary Programming Society, Award for efforts as Technical Co-chair of the Fourth Annual Conference on Evolutionary Programming, (March 1995).

Ford Motor Company/Wayne State University, Award for Excellence in Teaching & Outstanding Achievement in Electronics and Computer Control Systems Masters Program, (Fall, 1989)

Member of Scientific Research Honor Society, University of Michigan, (Sigma XI) (1978)

Bachelor of Science with Distinction, University of Michigan (1970)

Angell Scholar, University of Michigan, (1969-1970)

BIOGRAPHICAL CITATIONS:

American Men and Women of Science (1998-2004)

Marquis Who's Who in Science and Technology (2000-2004)

Marquis Who's Who International Scientist of the Year (2003)

I. TEACHING:

A. Years at Wayne State:

Department of Computer Science, September, 1983 to present.

B. Years at Other Colleges/Universities:

University of Michigan, Department of Anthropology , 1981-1982.
(Lecturer)

Michigan State University, Department of Computer Science, 1979-1983.
(Assistant Professor, Computer Science, College of Engineering)

University of Michigan , Department of Computer Science, 1978-1979.
(Teaching Assistant)

University of Michigan , Department of Geography, 1973-1975.
(Teaching Assistant)

C. Courses Taught at Wayne State:

Graduate:

CSC 511 - Advanced Software Development

CSC 520 - Programming Languages

CSC 5800 - Artificial Intelligence Tools

CSC 6110 – Software Engineering

CSC 6140 - Knowledge Based Software Engineering Environments

CSC 6260 - Compiler Design

CSC 6500 - Theory of Automata and Languages

CSC 6580 - Analysis of Algorithms

CSC 6800 - Artificial Intelligence I

CSC 7110 - Special Topics in Advanced Software Development

CSC 7800 - Artificial Intelligence II: AI and Game Programming

CSC 8110 – Seminar in Software Engineering

CSC 8800 - Seminar on Intelligent Systems

Undergraduate:

CSC 1000 - Introduction to Computer Science

CSC 1010 - Introduction to Computing

CSC 3200 - Programming Languages

CSC 4110 - Introduction to Software Engineering

CSC 4995 - Practical Training in Computer Science

CSC 4996 - Frontiers of Computing

D. Essays/Theses/Dissertations Directed:

Ph.D. Theses Directed:

Bin Peng, “Knowledge Swarms in Cultural Algorithms for Dynamic Environments”,
at Wayne State University, in progress.

Ziad Kobti, “Learning in Dynamic Hierarchical Network Structures in Complex

Systems”, at Wayne State University, Fall, 2004.

Sean Che, “Evolution of Decision Systems”, at Wayne State University, in progress.

Alina Lazar, “The Impact of Heuristic Knowledge Discovery Techniques on the Multi-Agent Simulation of Cultural Evolution”, at Wayne State University, Winter 2002.

David Ostrowski, "Using Cultural Algorithms to Evolve Strategies in Agent Based Models", at Wayne State University, Winter 2002.

Nestor Rychtyckyj, "Using Cultural Algorithms to Re-Engineer Semantic Networks", at Wayne State University, Winter, 2001.

Saleh Saleem, Knowledge-Based Solutions to Dynamic Problems Using Cultural Algorithms”, at Wayne State University, Winter, 2001.

Xidong Jin, “Solving Constrained Optimization Problems Using Cultural Algorithms and Regional Schemata”, at Wayne State University, Winter 2001.

George Cowan, "An Evolutionary Computational Approach to the Software Engineering of Evolving Programs", at Wayne State University, Fall , 1999.

Shinin Zhu, “Fuzzy Algorithms with Evolutionary Programming for Real-Valued Function Optimization”, at Wayne State University, Fall, 1998.

Hassan Al-Shehri, "Evolution-Based Decision-Tree Optimization Using Cultural Algorithms", at Wayne State University, Spring, 1997.

Chan Jin Chung, "Knowledge-Based Approaches to Self-Adaptation in Cultural Algorithms", at Wayne State University, Winter 1997.

Ayman Nazzal, "Learning Site-Settlement Patterns From Large Spatio-Temporal Databases With Cultural Algorithms", at Wayne State University, Winter, 1997.

Elena Zannoni, "Cultural Algorithms with Genetic Programming: Learning to Control the Program Evolution Process", at Wayne State University, Fall, 1996.

Michael Cavaretta, "Cultural Algorithms and Real-Valued Function Optimization", at Wayne State University, Fall, 1995 .

Jonathan Maletic, "The Software Service Bay: A Methodology for Knowledge-Based Software Maintenance", at Wayne State University, Fall, 1995.

Ph.D Committee Member:

Robert J. Calin-Jageman, Dept. of Psychology, "Neural Basis of Environmental Regulation of the Aplysia Siphon-Withdrawal Reflex, at Wayne State University, Summer, 2004.

Jeffrey Pfaffman, "Microtubule Learning Models", at Wayne State University, 2003.

Jon Brewster, Area: Biological Information Processing, Wayne State, 2002.

George Schliess, Area: Learning in Artificial Neural Networks, Wayne State University, 2002.

Jose Juarez-Seqovia, Area: Biological Information Processing, Wayne State University, 2001.

Nicholas Gessler, "Artificial Cultures", University of California, Los Angeles, 2000.

Ahmet Ugur, Area: Artificial Neural Network Learning, Wayne State University, 1998.

Pierre Wijkman, Area: Evolutionary Computation, University of Stockholm, Sweden, 1997.

Master's Thesis Directed:

Dawit Yifter, "Agent-Based Models of Early Cultural Evolution", at Wayne State University, in progress.

Nooshi Zadegan, "Decision-Making and the Evolution of Language", at Wayne State University, in progress.

Benjamin Carnes, "Embedding Intelligence in 3D Games: A Day in the Life of the Anazazi", in progress.

Howard Scheer, "Agent-Based Modeling of Pre-Hominid Decision-Making", at Wayne State University, Summer, 2004.

Ndella Dioum, "Agent-Based Models of Cultural Evolution", at Wayne State, Winter 2004.

Soonwon Kim, "Data Mining of Agent Rules for a Large-Scale Multi-Agent System", at Wayne State University, Fall, 2002.

Jeff Stefan, "Optimal Path Search Using Cultural Algorithms", at Wayne State University, Fall, 2002.

Radu Iacoban, "The Synergy of the Knowledge factors of the Cultural Algorithm When Applied to Static and Dynamic Environments", at Wayne State University, Fall, 2002.

Steve Goodhall, "Multi-Agent Simulation of Hunter-Gatherer Behavior", at Wayne State University, Fall, 2002.

Ronald Isles, "Reasoning About Genetic Programs Function and Structure Using Cultural Algorithms", at Wayne State University, Fall, 2000.

Eva Kala, "Representation Shifts and Hierarchical Search in the Royal Road Problem Using Cultural Algorithms", at Wayne State University, Fall, 1999.

Michael Sternberg, "Using Cultural Algorithms to Support the Re-Engineering of Rule-Based Expert Systems in Dynamic Performance Environments: A Fraud Detection Example", Winter, 1997.

William Mosely, "Learning Concepts and Solving the Royal Road Problem Using Cultural Algorithms", at Wayne State University, Winter, 1995.

Master's of Arts Essays Directed:

Il-Ryun Pak, "Evolutionary Computation Paradigms: A Survey", at Wayne State University, Winter, 1995.

Master's of Arts Directed:

Anuradha Subramanian, Artificial Intelligence at Wayne State, Fall, 2004.

Vijaya Goli, Artificial Intelligence, at Wayne State University, Fall, 2000.

Christine Pearce, Artificial Intelligence, at Wayne State University, Winter, 1997.

Jim Ganas, Artificial Intelligence, at Wayne State University, Fall, 1996.

Melvin K. Sanny, Artificial Intelligence, at Wayne State University, Fall, 1996.

Tony Saketos, Artificial Intelligence, at Wayne State University, Fall, 1996.

II. RESEARCH:

A. Research in Progress, Not Yet Funded:

2005, National Science Foundation, “Evolving Problem Solving Cultures”, (PI), 3 years, \$295,938, submitted May 3, 2005. Not funded.

2005, National Science Foundation, “AOC: Early Cultural Evolution”, (PI, co-PI’s Robert Whallon, and David B. Fogel), 3 years, \$711,198, submitted February 23, 2005.

2005, Wayne State University, “Building Partnership Between Wayne State’s Artificial Intelligence Laboratory and the University of Windsor High Speed Computing Institute, (PI, co PI Ziad Kobti), 1 year, \$5,000, submitted February 25, 2005. Not funded.

2004, National Science Foundation, “The Effect of Environmental Diversity on the Emergence of Social Complexity in the Valley of Oaxaca, Mexico”, (PI, co-PI’s K. Flannery, and J. Marcus), 5 years, \$1,557,865, submitted November 17, 2004. Not funded.

2004, National Science Foundation, “A Novel Graduate Training and Education Program in Language Engineering”, F. Fotouhi PI, WSU, co-PI with A. Aristar, H. Jamil, and S. Lu, \$2,945,221, 5 years, submitted April 29, 2004. Not funded.

2004, National Science Foundation, “Coordinating Multi-Jurisdictional Disaster response Using Cultural Algorithms: Exploiting Knowledge Swarms to Improve System Resiliency”, (PI, co-PI with S. White, J. Tan, D. Brandenburg, and A. Batteau), \$726,291, 2 years, submitted March 1, 2004. Not funded

2004, National Science Foundation, “ITR: Collaborative Research: The Language Information Grid” (F. Fotouhi, PI, Wayne State University, co-PI with: S. Lu, A. Aristar, H. Jamil, D. Grosu, M. Brockmeyer; Univ. of Michigan Dearborn W. Grosky, N. Patel, Y. Song; Eastern Michigan Univ. H. Aristar; Univ. of Arizona; T. Langandan, S. Farrar; Univ. of California-Fresno, W. Lewis), \$3,445,037,. Not funded.

2003, National Science Foundation, “The Effect of Decision-Making on Language Evolution” (co-PI, PI R. Whallon, University of Michigan), 3 years, \$416,908. Not funded. Under revision.

2003, NASA, “Computational Approaches to Modeling Culture and Aerospace Safety”, (co-PI, PI Allen Batteau) pre-proposal submitted, March 28, 2003. Not funded.

2003, National Science Foundation, ITR, “Multiple Agency Jurisdiction Organizational response (MAJOR) Disaster Management”, PI, (co-PI S. White, J. Tan, D. Brandenburg, and A. Batteau) five years, \$1,027,800, submitted February 15, 2003. Not funded.

2000, National Science Foundation, “Biocomplexity: An Integrated Approach to Biological and Cultural Adaptation”, (D. Read, PI, UCLA, co-PI with M. Fischer, and J. Johnson, five years, \$2,604,920, not funded.

2000, National Science Foundation, “Biocomplexity Approaches to the Location, Formation, and Dissolution of Neolithic Villages in the Prehispanic U.S. Southwest”, two years, (co-PI, T. Kohler, PI, Washington State University, K. Kolm, and M. Varien co-PI’s), two years, \$404,101, not funded.

2000, National Science Foundation, “Intregrated Model for Human Ecodynamics in a Small-scale Agricultural Society “,(co-PI, T. Kohler, PI, Washington State University, K. Kolm, and M. Varien co-PI’s), two years, \$130,400. Not funded.

2000, National Science Foundation, “Modeling Pueblo II/III Aggregation and Settlement Changes in Southwest Colorado Incorporating Paleo-hydrology and Changing Agricultural and Economic Strategies”, (co-PI, T. Kohler, PI, Washington State University, K. Kolm, and M. Varien co-PI’s), two years, \$126,706. Not funded.

B. Funded Research Last Five Years:

2003-2005, Wayne State University Research Enhancement Program, “Advanced Technologies for Language Engineering: A Digital Library for Endangered Languages”, (F. Fotouhi, PI, co-PI with S. Lu, and A Aristar), two years, \$185,000.

2002-2005, National Science Foundation, Biocomplexity, “Coupled Human/Social Systems Over Long Periods: Mesa Verde Region Prehispanic Dynamics”, (Co-PI with T. Kohler, M.Varien, and K. Kolm), three years, \$920,821.

1999-2002, National Science Foundation, Computer and Intelligent Systems Engineering Division, “Computational Models of State Formation” (PI, co-PI K. Flannery), three years, \$ 294, 441.

1996-1997, National Science Foundation, "Coalition for New Manufacturing Education: AI Based Learning Tools", Total Cost, \$32,432.

1994 - 1995, Ford Motor Company, "The Development of an Adaptive Knowledge Based Float Glass Scheduler Using Cultural Algorithms", Total Cost, \$25,000.

1994 -1995, National Aeronautics and Space Administration, "The Use of Problem Solving Paradigms in the Stepwise Refinement of Object Oriented Languages (renewal)", Total Cost, \$22,000.

III. PUBLICATIONS:

The * notation indicates first author status.

A. Scholarly Books Published:

1. Authored:

An Adaptive Computer Model of the Evolution of Agriculture in the Valley of Oaxaca, Mexico, Ph.D. Thesis, University of Michigan, 1979, University Microfilms

This thesis used a specific machine learning technique, genetic algorithms, to model the decision-making adaptations made by prehistoric hunter-gatherers during the process of developing incipient agriculture. The genetic algorithm selectively operated on decision-making procedures expressed as production rules in a knowledge base in order to adapt to the simulated environment in which the

system was embedded. The results were compared with the archaeological data from the region and proved sufficient to explain a number of patterns in that data.

2. Co-Authored:

Excavations at San Jose Magote I: The Household Archaeology (Kent V. Flannery, Joyce Marcus, with contributions by Robert G. Reynolds).

The Automatic Acquisition of Software Engineering Knowledge: Evolution-Based Approaches to Knowledge Acquisition in Automatic Programming Systems (with George Cowan) World Scientific Press (2003).

This text focuses on the acquisition of knowledge about software engineering activities within a Genetic Programming Environment Using Cultural Algorithms. The book describes an automated programming environment based around Genetic Programming (GP) that supports the development of large-scale software systems. An example subsystem describing the learning of metrics to describe the quality of software produced by a GP agent is presented.

The Flocks of the Wamani, Academic Press, 1989 (with Kent V. Flannery and Joyce Marcus).

This text focuses on the development of both computer simulations and analytical models that describe how cooperative mechanisms can be learned and spread within a distributed problem solving system. The specific example used here are the gift giving ceremonies of Peruvian Llama herders.

3. Book proposals submitted

Cultural Algorithms in Theory and Practice, co-authors Robert G. Reynolds, Ziad, Kobti, and Bin Peng, submitted to IEEE Press.

This book focuses on the design of Cultural Algorithm solutions to real world problems. It begins with the introduction of a simple CA in part I, and then proceeds to add on additional Cultural Knowledge through progressively more complex examples in part II. Part III examines real world applications of the technique.

B. Chapters Published:

1. Authored:

Reynolds, R. G., " Chapter 1: A General Statistical Analysis of Occupational Remains in Cueva Blanca", in Cueva Blanca: The Site Report, Kent V. Flannery, Editor, Memoirs of the Museum of Anthropology at the University of Michigan, to appear.

Reynolds, R. G., " Chapter 2: Identifying Spatially Associated Groups of Artifacts Using Cluster Analysis", in Cueva Blanca: The Site Report, Kent V. Flannery, Editor, Memoirs of the Museum of Anthropology at the University of Michigan, to appear.

Reynolds, R. G., " Chapter 3: Extracting Drop Area Aggregates Using Techniques from Artificial Intelligence", in Cueva Blanca: The Site Report, Kent V. Flannery, Editor, Memoirs of the Museum of Anthropology at the University of Michigan, to appear.

Reynolds, R. G., " Chapter 4: Using the Extracted Drop Area Aggregates to Identify Regions of Activity in Zone E", in Cueva Blanca: The Site Report, Kent V. Flannery, Editor, Memoirs of the Museum of Anthropology at the University of Michigan, to appear.

Reynolds, R. G., " Chapter 5: Using the Extracted Drop Area Aggregates to Identify Regions of Activity in Zone D", in Cueva Blanca: The Site Report, Kent V. Flannery, Editor, Memoirs of the Museum of Anthropology at the University of Michigan, to appear.

Reynolds, R. G., " Chapter 6: Using the Extracted Drop Area Aggregates to Identify Regions of Activity in Zone C", in Cueva Blanca: The Site Report, Kent V. Flannery, Editor, Memoirs of the Museum of Anthropology at the University of Michigan, to appear.

Reynolds, R.G., "Chapter 25: Multi-Dimensional Scaling of San Jose Magote Data", to appear in San Jose Magote: The Site Report, Kent V. Flannery and Joyce Marcus, Editors, Memoirs of the Museum of Anthropology at the University of Michigan, in press, 2005.

Reynolds, R.G., "Software Design Metrics", Encyclopedia of Software Engineering: Second Edition, Ed. J. Marciniak, John Wiley and Sons Press, 2002.

Reynolds, R.G., "The Impact of Raiding on Settlement Patterns in the Northern

Valley of Oaxaca: An Approach Using Decision Trees, Dynamics in Human and Primate Societies: Agent-Based Modelling of Social and Spatial Processes, T. Kohler and G. Gummerman, Editors, Oxford University Press, 1999, pp: 251-274.

Reynolds, R.G., "An Overview of Cultural Algorithms", New Ideas in Optimization, D. Corne, F. Glover, and M. Dorigo Ed., McGraw Hill Press, 1999, pp: 367-378.

Reynolds, R. G., "Why Does Cultural Evolution Proceed at a Faster Rate Than Biological Evolution?", in Time, Process, and Structured Transformation in Archaeology, Sander van der Leeuw and James McGlade Editors, Routledge Press, New York, NY, 1997, pp. 269-282.

Reynolds, R. G., "Introduction to Cultural Algorithms", in Proceedings of the Third Annual Conference on Evolutionary Programming, Anthony V. Sebald and Lawrence J. Fogel, Editors, World Scientific Press, Singapore, 1994, pp.131-139.

Reynolds, R. G., "Learning to Cooperate Using Cultural Algorithms", in Simulating Societies, Nigel Gilbert and J. Doran, Editors, University College of London Press, 1994, pp. 223-244.

Reynolds, R. G., "The Design of an Adaptive Expert Database Interface", in Relational Database Machine Architecture, A. K. Sood and A. H. Qureshi, Editors, Spring-Verlag Press, 1986.

Reynolds, R. G., "An Adaptive Computer Model for the Evolution of Plant Collecting and Early Agriculture in the Eastern Valley of Oaxaca", in Guila Naquitz: Archaic Foraging and Early Agriculture in Oaxaca, Mexico, K. V. Flannery, Editor, Academic Press, 1986. pp. 439-500.

Reynolds, R. G., "Multidimensional Scaling of Four Guila Naquitz Living Floors", in Guila Naquitz: Archaic Foraging and Early Agriculture in Oaxaca, Mexico, K. V. Flannery, Editor, Academic Press, 1986. pp: 385-424.

Reynolds, R. G., "PARTIAL: A Software Tool for the Development of ADA Programs", in Empirical Foundations of Information and Software Science, J. Agrawal and P. Zunde, Editors, 1985. pp. 241-264.

Reynolds, R. G., "The Application of a Double Dependence Markov Model to the Analysis of Settlement Patterns Along the Rio Grijalva", in The Early Mesoamerican Village, K. V. Flannery, Editor, Academic Press, 1976. pp. 180-191.

2. Co-Authored:

Kohler, T., Johnson, D., Kolm, K., and Varien, M., Ortman, S., Reynolds, R.G., Kobti, Z.,, “Settlement Ecodynamics in the Prehispanic Mesa Verde”, to appear in Sante Fe Workshop on Human Environment Interactions, Oxford University Press, 2005.

Reynolds, R.G., Sverdlik, W. and Kala, E. , “The Power of Abstraction: Achieving Resilience in the Solution of Hierarchically Structured Problems Using Representation Shifts, Abisko Workshop on System Resilience, Ed. Van Der Leeuw, S., Kohler, T., and Read, D, Kluwer Academic Press, to appear, 2005.

Lazar, A., and Reynolds, R.G., “Evolution-Based Learning of Ontological Knowledge for a Large-Scale Multi-Agent Simulation”, Information Processing and Evolutionary Algorithms-From Industrial Applications to Academic Speculation, M. Grana, R.J. Duro, A.D. Aryou, and P.P Wang, eds, Berlin, Springer-Verlag, 2005.

Reynolds, R.G., and Saleem, S., “The Impact of Environmental Dynamics on Cultural Emergence”, Perspectives on Adaptation in Natural and Artificial Systems: Essays in Honor of John Holland, L. Booker, S. Forrest, M. Mitchell, and R. Riolo, Eds., Oxford University Press, pp. 253-280, 2005.

Ostrowski, D, and Reynolds, R. G., “Using Software Engineering Knowledge to Drive Genetic Program Design Using Cultural Algorithms: Exploiting the Synergy of Software Engineering Knowledge in Evolutionary Design”, in Advances in Genetic Programming, Editors: Rick Riolo and Bill Wurzel, Kluwer Academic Press, Boston, MA., 2003, pp: 63-80.

Lazar, A., and Reynolds, R. G., “Heuristic Knowledge Discovery for Archaeological Data Using Cultural Algorithms and Rough Sets”, Heuristics and Optimization for Knowledge Discovery”, R. Sarkar, H. Abbass, and C. Newton, Editors, Kluwer Academic Press, 2003.

Reynolds, R.G., and C., "Function Optimization using Evolutionary Programming with Self-Adaptive Cultural Algorithms", in Lecture Notes on Artificial Intelligence, Springer-Verlag Press, 1997, pp. 184-198.

Reynolds, R.G., and Chung, C., "A Cultural Algorithm to Evolve Multi-Agent Cooperation Using Cultural Algorithms", in Evolutionary Programming VI,

P. J. Angeline, R. G. Reynolds, J. R. McDonnell, and R. Eberhart, Editors, Springer-Verlag Press, New York, NY, 1997, pp. 323-334.

Reynolds, R.G., and Nazzal, A. "Using Cultural Algorithms with Evolutionary Computing to Extract Site location Decisions From Spatio-Temporal Databases, in Evolutionary Programming VI, P. J. Angeline, R. G. Reynolds, J. R. McDonnell, and R. Eberhart, Editors, Springer-Verlag Press, New York, NY, 1997, pp. 323-334.

Reynolds, R. G., and Chung, C., "A Test Bed for Solving Optimization Problems Using Cultural Algorithms", in Evolutionary Programming V, John R. McDonnell, and Peter Angeline, Editors, A Bradford Book, MIT Press, Cambridge Massachusetts, 1996, pp. 225-236.

Zannoni, E., and Reynolds, R. G., "Extracting Design Knowledge from Genetic Programs Using Cultural Algorithms", in Evolutionary Programming V, Peter Angeline, Editor, A Bradford Book, MIT Press, Cambridge Massachusetts, 1996, pp. 217-224.

Reynolds, R.G., Michalewicz Z., and Cavaretta M. J., "Using Cultural Algorithms for Constraint Handling in Genocop", in Evolutionary Programming IV, J. R. McDonnell, R.G. Reynolds, and David B. Fogel, Editors, a Bradford Book, MIT Press, Cambridge, Massachusetts, 1995.

Reynolds, R. G., and Zannoni, E., "Software Metrics", in Encyclopedia of Microcomputers, A. Kent and J. G. Williams, Editors, Marcel Dekker Inc., New York, 1995, Vol. 16, pp. 111-126.

Reynolds, R. G., and Zannoni, E., "Software Metrics", in Encyclopedia of Software Engineering, J. J. Marciniak, Editor, McGraw-Hill, 1994, pp. 676-685 .

Reynolds, R.G., and Maletic J. I., "The Evolution of Cooperate using Cultural Algorithms", in Proceedings of the Third Annual Conference on Evolutionary Programming, Anthony V. Sebald and Lawrence J. Fogel, Editors, World Scientific Press, Singapore, 1994, pp.141-149.

Reynolds R. G., Zannoni, E., and Posner, R. M., "Learning to Understand Software using Cultural Algorithms", in Proceedings of the Third Annual Conference on Evolutionary Programming, Anthony V. Sebald and Lawrence J. Fogel, Editors, World Scientific Press, Singapore, 1994, pp.150-157.

Reynolds, R. G. , Brown, W., and Abinoja, E., "Guiding Parallel Bidirectional Search with Cultural Algorithms, in Proceedings of the Third Annual Conference on Evolutionary Programming, Anthony V. Sebald and Lawrence J. Fogel, Editors, World Scientific Press, Singapore, 1994, pp.167-174.

Reynolds, R. G., et. al. "Modeling the Evolution of Southwestern Cultural Systems", in The Origin and Evolution of Prehistoric Southwestern Society, School of American Research, 1992.

Reynolds, R. G., and Maletic, J., "Operationalizing Software Reuse as a Problem in Machine Learning", in Automating Software Design, G. Johnson, Editor, USC/ISI Technical Publications, RS-91-237, 1991.

Reynolds, R. G. and Zeigler, B., "Modeling Alternative Structures for Time Critical Corporate Adaptations", in Real-Time Control of Large Scale Systems, Tsafestas, Editor, Lecture Notes on Information and Control, Springer-Verlag, 1984.

Reynolds, R. G. and Zeigler, B., "Information Processing Models for Hunter-Gatherer Decision Making", in Mathematical Models of Cultural Change, Colin Renfrew and Kenneth Cooke, Editors, Academic Press, December 1978. pp. 485-418.

C. Editorships:

Reynolds, R.G., Co-Editor, IEEE Proceedings of the 2003 Congress on Evolutionary Computation, with Rahul Tikar, and Bob McKay, 2003.

Reynolds, R.G., Co-editor, Tools for Artificial Intelligence 1997 Proceedings, with Phillip Sheu, IEEE Press.

Reynolds, R.G., Co-Editor, Evolution Programming VI, with Peter Angeline, Russ Eberhart, and John McDonnell, Springer-Verlag Press, 1997.

Reynolds, R.G., Co-Editor, Evolution Programming IV, with John R. McDonnell, and David B. Fogel, Bradford Books, MIT Press, Cambridge Massachusetts, 1995.

Reynolds, R. G., Guest Editor, "Special Issue on the Use of Evolution-Based Approaches in Software Engineering", International Journal of Software Engineering and Knowledge Engineering, June, 1995.

Reynolds, R. G., Guest Editor of, "The Evolution of Commercial AI Tools: The First Decade", invited paper by Frederick Hayes-Roth, International Journal on Artificial Intelligence Tools, Vol. 2, No. 1, pp. 1-13,1993.

Reynolds, R. G, Guest Editor, Special issue on the Acquisition of Software Engineering Knowledge, in International Journal of Software Engineering and Knowledge Engineering, Vol. 1, No. 4, December, 1991.

D. Journal Articles Published:

1. Refereed Journals:

Reynolds, R.G., Kobti, Z., Kohler, T., and Yap, L., "Unraveling Ancient Mysteries: Re-imagining the Past Using Evolutionary Computation in a Computer Gaming Environment", accepted for publication pending, IEEE Transactions on Evolutionary Computation, to appear 2005.

Kohler, T., Gummerman, G., and Reynolds, R. G., "Virtual Archaeology", Scientific American, vol. 293, no. 1, pp: 76-84, July, 2005.

Kent V. Flannery, Andrew K. Balkansky, Gary M. Feinman, David C. Grove, Joyce Marcus, Elsa M. Redmond, Robert G. Reynolds, Robert J. Sharer, Charles S. Spencer, and Jason Yaeger, "Implications of New Petrographic Analysis for the Olmec "Mother Culture" Model", in Proceedings of the National Academy of Sciences, vol. 102, no. 32, pp:11219-11223, August 8, 2005.

Rychtyckyj, N. and Reynolds, R.G., "Using Cultural Algorithms to Re-Engineer Large-Scale Semantic Networks, International Journal of Software Engineering and Knowledge Engineering, to appear, 2005.

Reynolds, R. G., and Peng, B., "Knowledge Learning and Social Swarms in Cultural Algorithms", Journal of Mathematical Sociology, London, Routledge, Vol. 29: pp. 1-18, 2005..

Reynolds, R. G., Lu, S., Liu, D., Fotouhi, F.*, Dong, M., Aristar, A., Ratliff, M., Nathan, G., Tan, J., and Powell, R., "Language Engineering For The Semantic Web: A Digital Library For Endangered Languages", International Journal of Information Research, 2005, Vol. 9, No. 3, 2004.

Reynolds, R.G., and Kobti, Z., and Kohler, T., "The Effects of Generalized Reciprocal Exchange on the Resilience of Social Networks: An Example From the Prehistoric Mesa Verde Region", Journal of Computational and Mathematical and Organization Theory, Kluwer Academic Publishers, 2004, pp: 229-254.

Jin, X. and Reynolds, R. G., "Regional Schemata for Real-Valued Constrained Function Optimization Using Cultural Algorithms", Journal of Natural Computing, T. Back, Editor, 2002.

Reynolds, R.G., Goodhall, S., and Whallon, R., "Transmission of Cultural Traits by Emulation: An Agent Based Model of Group Foraging Behavior", Journal of Memetics, Vol. 4, Issue 2, March, 2001.

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Reynolds, R. G., Chang, S., and Maletic, J. I., "The Use of Version Space Controlled Genetic Algorithms to Solve the Boole Problem", Proceedings of the Third International Conference on Tools for AI, San Jose, CA, Nov. 12-15, 1991, pp. 14-21.

Reynolds, R. G., and Maletic, J. I. "The PM System: An Approach to Operationalizing Software Reuse as a Problem in Machine Learning", Proceedings of AAAI Workshop on Automating Software Design, Anaheim, California, July 15, 1991., pp. 136-143.

Reynolds, R. G., Maletic, J. I., and Porvin, S. "Decoding the Stepwise Refinement Process: Stepwise Refinement as a Problem Solving Activity". Third International Conference on Software Engineering and Knowledge Engineering, Skokie, Illinois, June 22-24, 1991, pp. 108-113.

Reynolds, R. G., "Autonomous Learning Elements: Their Design and Application", in IEEE Proceedings of Second Annual Conference on AI, Simulation and Planning in High Autonomy Systems, Cocoa Beach, Florida, April 1-2, 1991, pp. 6-14.

Reynolds, R. G., and Maletic, J. I., "Software Reuse as a Problem in Machine Learning". Proceedings of Fourth Florida Artificial Intelligence Research Symposium, Cocoa Beach, Florida, April 2-5, 1991, pp. 155-159.

Reynolds, R. G., Maletic, J. I., and Porvin, S., "An Object-Oriented Approach to the Acquisition of Software Engineering Knowledge", ACM National Conference, San Antonio, March 5-7, 1991, pp. 78-84.

Reynolds, R. G., and Porvin S.*, "Divide and Conquer as a Paradigm for Program Implementation", An Empirical Assessment, ACM National Conference, San Antonio, March 5-7, 1991, pp. 618-632.

Reynolds, R. G., "The Control of Genetic Algorithms Using Version Spaces", Proceedings of Second IEEE International Conference on Tools for AI, Washington D.C., Nov. 5-8, 1990, pp. 485-493.

Reynolds, R. G., "Search Hypothesis Spaces Using Genetic Algorithms", Selected Papers of 5th International Symposium on Methodologies for Intelligent Systems, Knoxville, Tennessee, October 24-27, 1990, pp. 191-202

Reynolds, R. G. and Esteva, J. C., "Recognition of Structurally Reusable Software Modules by Induction", in Proceedings of the Second International Conference on Knowledge Engineering and Software, Skokie, IL, June 21-23, 1990, pp. 19-25.

Reynolds, R. G., and Esteva, J. C., "Learning to Recognize Reusable Software by Induction in the PM System", in Proceedings of 8th Annual SPIE Conference on the Applications of Artificial Intelligence, Orlando, Florida, April 17-19, 1990, pp. 664-670.

Reynolds, R. G., and Maletic, J. I., "The Use of Refinement Metrics to Assess

Programming Language Support for the Stepwise Refinement Process", in Proceedings of 1990 ACM 18th Annual Computer Science Conference, Washington, D.C., Feb. 21-23, 1990, pp. 82-88.

Reynolds, R. G., Maletic, J. I., and Porvin, S., "PM: A Metrics Driven Plan Compiler for Ada", in Proceedings of Fifth Annual Conference on Artificial Intelligence and Ada, Nov. 16-17, 1989. Washington D.C., pp. 149-160.

Reynolds, R. G., Maletic, J. I., and Porvin, S., "PM: A Metrics-Driven Plan Compiler", in Proceedings of the First IEEE International Conference on Tools for Artificial Intelligence, October 23-25, 1989. Fairfax, Virginia, pp. 677-684.

Reynolds, R. G., Maletic, J. I., and Porvin, S. "PM: A Metrics-Driven Approach to the Automatic Acquisition of Software Engineering Knowledge", Proceedings of the Workshop on Automating Software Design, IJCAI-89, Detroit, Michigan, August 21, 1989, pp. 223-232.

Reynolds, R. G., Maletic, J. I., and Porvin, S., "A Metrics-Driven Approach to the Acquisition of Software Design Knowledge", in Proceedings of the Workshop on Knowledge Acquisition, IJCAI-89, Detroit, Michigan, August 22, 1989, pp. 141-144.

Reynolds, R. G., "The Metrics-Driven Generation of Program Refinement Plans for Code Modules", Proceedings of 1st International Conference on Knowledge Engineering and Software Engineering, Skokie, Illinois, June 15-16, 1989. pp. 25-30.

Reynolds, R. G., Maletic, J. I., and Porvin, S., "PM: A Metrics-Based Plan Compiler", Proceedings of AAAI Workshop on AI and Software Engineering, University of Exeter, UK., April 12-14, 1989, pp. 32-35.

Reynolds, R. G., "A Metrics-Driven Approach to the Automatic Acquisition of Software Engineering Knowledge", in Proceedings of 1988 AAAI Workshop on Automated Software Design, St. Paul, Minnesota, August 26, 1988, pp. 121-123.

Reynolds, R. G., "Automated Program Development using Metric Information", IEEE Software Design Metrics Workshop, Melbourne, FL., March 14-16, 1988, pp. 22-27.

Reynolds, R. G., "Metrics-driven Acquisition of Software Engineering

Knowledge", Proceedings of the 6th Symposium on Empirical Foundations of Information and Software Science., Atlanta, Georgia, Oct. 19-21, 1988, pp. 60-72.

Reynolds, R. G., "The Application of Classifier Systems to the Acquisition of Software Engineering Knowledge", Proceedings of the 1st International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems. University of Tennessee Space Institute, Tullahoma, Tennessee. June 1-3, 1988, pp. 201-211.

Reynolds, R. G., "Metrics-Based Reasoning about Pseudo Code Design in the Partial Metrics System", Proceedings of the ESD/SMI Conference on Expert Systems, Dearborn, MI June 7-11, 1987, pp. 119-128.

Reynolds, R. G., "A Heuristic Basis for the Origins of Agriculture", Proceedings of 1986 IFAC Workshop on the Modeling of Decision-Making Systems, Beijing, China, August, 1986, pp. 47-54.

Reynolds, R. G., "A Metrics-Based System to Monitor the Stepwise Refinement of Program Modules", Proceedings of the Fourth Conference on Intelligent Systems and Machines, Oakland University, April 29-30, 1986, pp. 148-160.

Reynolds, R. G. and Azar G., "An Adaptive Interface for Intelligent Information Retrieval", Proceedings of the Fourth Conferences on Intelligent Systems and Machines. Oakland University, Rochester, Michigan, April 29-30, 1986, pp. 101-110.

Reynolds, R. G. and Esteva, J.*, "A Real-Time Knowledge-Based Expert System for Diagnostic Problem Solving", Proceedings of Third SPIE Conference on Applications of Artificial Intelligence, Orlando, Florida, April 1-3, 1986, pp. 224-232.

Reynolds, R. G. and Roberts, D., "PARTIAL: A Tool to Support the Metrics Driven Design of ADA Programs", Proceeding 1986 ACM 14th Annual Computer Science Conference, Cincinnati, Ohio, February 4-6, 1986, pp. 213-220.

Reynolds, R. G., "The Design of an Adaptive Expert Database Interface", Proceedings of NATO Workshop on the Design of Relational Database Machine Architecture, Les Arcs, France, July 15-26, 1985, pp. 557-572.

Reynolds, R. G. and Zeigler, B. P.*, "Towards a Theory of Adaptive Computer

Architecture", in Proceedings of IEEE 5th International Conference on Distributed Computing Systems, Denver, Colorado, May 13-17,1985, pp. 212-224.

Reynolds, R. G., "The Use of Expert Systems in Archaeology", in Proceedings of International Union of Pre- and Proto-Historical Sciences, Denver, Colorado, April 29 - May 1, 1985, pp. 55-66.

Reynolds, R. G. and Cichanowski G. "Distributed Algorithms for On-Line Bin Packing", Proceedings of 1984 Conference on Intelligent Systems and Machines, Oakland University, Rochester, Michigan, April 24, 1984, pp. 110-121.

Reynolds, R. G. and Cichanowski G., "A Parallel Algorithm for On-Line Bin Packing", Proceedings, SIAM 1983 Fall Meeting, Norfolk, Virginia, November 3 - 7, 1983, pp. 88-96.

Reynolds, R. G. and Zargham M. R., "Fault Dominance in Reliability Petri Nets", Proceedings of Second International Symposium on Applied Simulation and Modeling, San Francisco, May 16-18, 1983, pp. 142-151.

Reynolds, R. G. and Zargham M. R., "Reliability Petri Nets: Models for Fault Detection in Systems Using Expert Information", Proceedings of First Conference on Artificial Intelligence, Oakland University, April 26, 1983, pp. 477-492.

Reynolds, R. G., "Metrics to Assess the Structural Complexity of Parallel Programs", Symposium on Empirical Foundations of Software Science, Atlanta, Georgia, November 3-5, 1982, pp. 188-200.

Reynolds, R. G. and Chang T. L., "The PAL System: A Parallel Algorithm Design System for VLSI Based Architectures", Proceedings 10th International IMACS Conference, Montreal, Canada, August 8-13, 1982, pp. 314-319.

Reynolds, R. G., " A Computer Simulation of the Development of Incipient Agriculture in the Valley of Oaxaca, Mexico", in Proceedings 10th International Conference on Pre- and Proto-Historical Sciences, Mexico City, Mexico, October 19-24, 1981, pp. 202-216.

Reynolds, R. G., Fisher P. D., and Bridge C., "Asynchronous Arithmetic Algorithms for Data-Driven Machines", presented at the 5th Symposium on Computer Arithmetic, Ann Arbor, Michigan, April 16-21, 1981 pp. 88-95.

H. Book Reviews Published:

Reynolds, R.G., "A Review of Evolutionary Computation: The Fossil Record, David Fogel, Editor, Biosystems , 2000.

Reynolds, R.G., "A Review of Evolutionary Computation: Towards a New Philosophy of Machine Intelligence by David Fogel", Biosystems , 1997, pp. 277-279.

Reynolds, R. G., "A Review of Sauer and Chandy's Book, Computer System's Performance Modeling", IEEE-Computer, Vol. 15, May 1982, pp. 157-158.

Reynolds, R. G., "A Review of Cliff and Ord's, Spatial Auto correlation", Geographical Analysis, Vol. VI, January 1974, pp. 100-104.

L. Papers Presented:

1. Talks given Dr. Reynolds for invited and/or Refereed Papers Internationally or Nationally (abstract published):

Reynolds, R.G., and Whallon, R., "Using Cultural Algorithms to Model Social Evolution", 2005 Society of American Archaeology Annual Meeting, Salt Lake City, Utah, March 30-April 3.

Reynolds, R.G., Scheer, H., and Whallon, R., "Agent-Based Modeling of Early Hominid Decision-Making", 2005 Society of American Archaeology Annual Meeting, Salt Lake City, Utah, March 30-April 3.

Reynolds, R.G., "The Village Project: Modeling the Ancient Anazazi Using Cultural Algorithms", Workshop on the Village Project, Anazazi Heritage Center, Cortez, CO, October 22, 2004.

Reynolds, R.G., Kobti Z., and Kohler, T., " Modeling the Emergence of Social Complexity in Mesa Verde Using Cultural Algorithms", Santa Fe Institute Workshop on the Emergence of Social Complexity, Santa Fe , NM, October 24-27, 2004.

Reynolds, R. G., Kobti, Z. , and Kohler, T., "Agent-Based Modeling of Cultural Change in Swarm Using Cultural Algorithms", in Proceedings of SWARMFEST 2004, University of Michigan, Ann Arbor, May 9-11, 2004.

Reynolds, R.G., and Kobti, Z.*, "Learning in Dynamic Multi-Layered Social Networks" in Proceedings of 2004 Annual Meeting of the Society for American Archaeology, Montreal, Canada, March 31- April 4, 2004.

Reynolds, R.G.*, and Scheer, H., and Whallon, R., "Agent-based Modeling of Economic Sharing in Pre- or Proto-Cultural Foraging Groups" in Proceedings of 2004 Annual Meeting of the Society for American Archaeology, Montreal, Canada, March 31- April 4, 2004.

Reynolds, R.G., and Ostrowski, D.*, "Using Cultural Algorithms to Evolve Strategies for Recessionary Markets", Society for Industrial and Applied Mathematics Conference on Agent based Modeling and Simulation, November 3-6, 2003, Minneapolis, Minnesota.

Reynolds, R.G., and Stefan, J., "Evolution-Based Approaches to the Preservation Endangered Natural Languages", Workshop on Digital Libraries for Cultural Preservation, Wayne State University, Detroit, Michigan, October 27, 2003.

Reynolds, R. G., Peng, Bin, and Brewster, Jon, "The Impact of Culture on Social Interaction and Problem Solving: Cultural Swarms", NAACDOS 2003, June 20-22, 2003, Pittsburgh, Pennsylvania.

Reynolds, R.G., Kobti Z., and Kohler, T., "Agent-Based Approaches to Modeling the Ancient Anazazi Using Cultural Algorithms", NAACDOS 2003, June 20-22, 2003, Pittsburgh, Pennsylvania.

Reynolds, R., and Lazar, A.*, "A Computational Framework for Modeling the Dynamic Evolution of Large-Scale Multi-Agent Organizations" Proceedings SPIE Conference on Enabling Technologies for Simulation Science, April 1-5, 2002.

Reynolds, R. and Lazar, A. *, "Evolution-Based Learning of Ontological Knowledge for a Large-Scale Multi-Agent Simulation", Proceedings of 4th International Workshop on Frontiers in Evolutionary Computation, Duke University, March 11-13, 2002.

Reynolds, R.G., "Knowledge Swarms and Cultural Evolution", Proceedings of American Anthropological Association Annual Meeting, November 28-31, 2001, Washington, D.C.

Reynolds, R.G., and Saleem, S.*, "Cultural and Social Evolution in Dynamic

Environments”, CASOS 2001, Carnegie-Mellon University, July 5-7, 2001.

Reynolds, R.G., and Saleem, S.*, “Knowledge-Based Function Optimization in Dynamic Environments Using Cultural Algorithms”, 2001 International Conference on Artificial Intelligence, Las Vegas, Nevada, June 25-28, 2001.

Reynolds, R.G., and Saleem, S.*, Workshop on Emergence, Transformation, and Decay in Socio-Natural Systems, Abisko, Sweden, May 19-23, 2001.

Reynolds, R.G., “Learning in Large-Scale Multi-Agent Systems”, Santa Fe Institute Workshop on Modeling Human Environmental Interaction, Santa Fe, New Mexico, December 7-9, 2000.

Reynolds, R.G., “Approaches to Modeling Large-Scale Multi-Agent Systems using Cultural Algorithms”, Workshop on Intelligent Multi-Agent Systems, University of Sienna, Sienna, Italy, September 4-6, 2000.

Reynolds, R. G., “On the Evolution of Schemata for Function Optimization”, Holland Fest 1999: New Directions in Evolutionary Computation Inspired by the Work of John Holland, Ann Arbor, Michigan, May 8-11, 1999

Reynolds, R.G., and Chung, Chan-Jin, “A Knowledge-Based Approach to Self-Adaptation in Evolutionary Search Using Cultural Algorithms”, 12th International FLAIRS Conference, Orlando, Florida, May 3-6, 1999.

Reynolds, R. G., “The Impact of Raiding on Settlement Patterns in the Northern Valley of Oaxaca: An Approach Using Decision Trees”, Santa Fe Institute Conference on Modeling the Dynamics of Agent Interaction in Small-Scale Societies, Sante Fe, New Mexico, September 14-17, 1998.

Reynolds, R. G., "Intelligent Agent Modeling with Cultural Algorithms", presented at Sante Fe Institute Workshop on Intelligent Agent Modeling and the Simulation of Social Evolution, December 4-7, 1997.

Reynolds, R.G., "Using Cultural Algorithms to Simulate Cultural Change in the Valley of Oaxaca, Mexico", Special Session on Computational Models of Social Systems, American Association of Anthropology Annual Meeting, Washington, D. C., 1997.

Reynolds, R. G., "Cultural Algorithms", invited talk, UCLA Workshop on Computational Models of Social Systems: A Symposium in honor of Marvin

Minsky, UCLA, February 29-March 2, 1997.

Reynolds, R.G., and Zannoni, E., "Evolving Software Design Methodologies in Automatic Programming Systems Using Cultural Algorithms", Second World Congress on Integrated Design and Process Technology", Austin Texas, December 1-4, 1996.

Reynolds, R. G., and Chung, Chan-Jin, "Function Optimization Using Evolutionary Programming with Self-Adaptive Cultural Algorithms", First Asian-Pacific Conference on Simulated Evolution and Learning, Taejon, Korea, November 8 -12, 1996.

Reynolds, R.G. and Chung Chan-Jin, "The Use of Cultural Algorithms to Evolve Multiagent Cooperation", 1996 World Cup Soccer Tournament, Taejon, Korea, November 8 -12, 1996 .

Reynolds, R. G., and Chung, Chan Jin, "The Use of Cultural Algorithms to Support Self-Adaptation in Evolutionary Programming", 1996 Adaptive Distributive Parallel Computing Symposium, Dayton, Ohio, August 8-9, 1996, pp. 260-271.

Reynolds, R.G., "Modeling the Evolution of Social Complexity in the Valley of Oaxaca Using Cultural Algorithms", Simulating Societies 1995, Boca Raton, Florida, Sept. 15-17, 1995.

Reynolds, R. G., Rolnick, S. R., "Learning the Parameters to a Gradient-Based Approach to Image Segmentation Using Cultural Algorithms", International Symposium on Intelligence in Neural and Biological Systems, May 29-31, 1995, Herndon, Virginia, pp. 240-247.

Reynolds, R.G., "Solving Design Problems Using Cultural Algorithms", Eighth Florida Artificial Intelligence Research Symposium, April 27-29, 1995, Melbourne, Florida, pp. 279-283.

Reynolds, R. G., and Maletic, J. I., "An Adaptive Approach to Manufacturing Optimization Using Cultural Algorithms: A Float Glass Example", Workshop on Artificial Intelligence in Automation, New Orleans, Louisiana, November 6, 1994.

Reynolds, R. G., and Sverdlik, W., "Learning the Behavior of Boolean Circuits From Examples Using Cultural Algorithms", Second Adaptive and Learning Systems Conference, SPIE International Symposium on Aerospace and Remote

Sensing, Orlando, Florida, April 12-16, 1993.

Reynolds, R. G., and Ghezavat, H., "The Inductive Learning of Software Metrics From Examples, Fifth Annual Oregon Workshop on Software Metrics, Silver Falls, Oregon, March 21-23, 1993.

Reynolds, R. G., Maletic J. I., and Zannoni, E., "The Acquisition and Management of Reusable Software in the PM System", First International Conference on Information and Knowledge Management, Baltimore, Maryland, November 8-10, 1992.

Reynolds, R. G., Maletic, J. I., Zannoni, E., "Operationalizing Software Reuse as a Problem in Machine Learning", 5th International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems, June 9-12, 1992, Paderborn, Germany.

Reynolds, R. G., and Zannoni, E., "Why Cultural Evolution Can Proceed Faster than Biological Evolution", International Symposium on Simulating Societies, Surrey, England, April 2-3, 1992.

Reynolds, R. G., and Maletic, J. I., "The PM System: An Approach to Operationalizing Software Reuse as a Problem in Machine Learning", AAAI Workshop on Automating Software Design, Anaheim, California, July 15, 1991.

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Reynolds, R. G., and Porvin S. *, "Divide and Conquer as a Paradigm for Program Implementation: An Empirical Assessment", ACM National Conference, San Antonio, March 5-7, 1991.

Reynolds, R. G., "Search Hypothesis Spaces Using Genetic Algorithms", 5th International Symposium on Methodologies for Intelligent Systems, Knoxville, Tennessee, October 24-27, 1990.

Reynolds, R. G., and Esteva, J. C., "Learning to Recognize Reusable Software by Induction in the PM System", 8th Annual SPIE Conference on the Applications of Artificial Intelligence, Orlando, Florida, April 17-19, 1990.

Reynolds, R. G. and Maletic, J. I., "The Use of Refinement Metrics to Assess Programming Language Support for the Stepwise Refinement Process", ACM 18th Annual Computer Science Conference, Washington, D.C., Feb. 21-23, 1990.
Reynolds, R. G., Maletic, J. I., and Porvin, S., "PM: A Metrics Driven Plan Compiler for ADA", Fifth Annual Conference on Artificial Intelligence and ADA, Nov. 16-17, 1989. Washington, D. C.

Reynolds, R. G., Maletic, J. I., and Porvin, S., "PM: A Metrics-Driven Plan Compiler", First IEEE International Conference on Tools for Artificial Intelligence, October 23-25, 1989. Fairfax, Virginia.

Reynolds, R. G., Maletic, J. I., and Porvin, S. "PM: A Metrics-Driven Approach to the Automatic Acquisition of Software Engineering Knowledge", Workshop on Automating Software Design, IJCAI-89, Detroit, Michigan, August 21, 1989, pp. 223-232.

Reynolds, R. G., Maletic, J. I., and Porvin, S., "PM: A Metrics-Based Plan Compiler", AAI Workshop on AI and Software Engineering, University of Exeter, U.K., April 12-14, 1989.

Reynolds, R. G., "A Metrics-Driven Approach to the Automatic Acquisition of Software Engineering Knowledge", AAI Workshop on Automated Software Design, St. Paul, Minnesota, August 26, 1988.

Reynolds, R. G., "Automated Program Development using Metric Information", IEEE Software Design Metrics Workshop, Melbourne, FL., March 14-16, 1988.

Reynolds, R. G., "Metrics-driven Acquisition of Software Engineering Knowledge", 6th Symposium on Empirical Foundations of Information and Software Science., Atlanta, Georgia, Oct. 19-21, 1988.

Reynolds, R. G., "The Application of Classifier Systems to the Acquisition of Software Engineering Knowledge", 1st International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems. University of Tennessee Space Institute, Tullahoma, Tennessee. June 1-3, 1988.

Reynolds, R. G., "Metrics-Based Reasoning about Pseudocode Design in the Partial Metrics System", ESD/SMI Conference on Expert Systems, Dearborn, MI June 7-11, 1987.

Reynolds, R. G., "A Heuristic Basis for the Origins of Agriculture", IFAC Workshop on the Modeling of Decision-Making Systems, Beijing, China, August, 1986.

Reynolds, R. G., "A Metrics-Based System to Monitor the Stepwise Refinement of Program Modules", Fourth Conference on Intelligent Systems and Machines, Oakland University, April 29-30, 1986.

Reynolds, R. G. and Azar, G., "An Adaptive Interface for Intelligent Information Retrieval", Fourth Conferences on Intelligent Systems and Machines. Oakland University, Rochester, Michigan, April 29-30, 1986.

Reynolds, R. G. and Esteva, J. C.*, "A Real-Time Knowledge-Based Expert System for Diagnostic Problem Solving", Third SPIE Conference on Applications of Artificial Intelligence, Orlando, Florida, April 1-3.

Reynolds, R. G. and Roberts, D., "PARTIAL: A Tool to Support the Metrics Driven Design of Ada Programs", ACM 14th Annual Computer Science Conference, Cincinnati, Ohio, February 4-6, 1986.

Reynolds, R. G., "The Design of an Adaptive Expert Database Interface", NATO Workshop on the Design of Relational Database Machine Architectures, Les Arcs, France, July 15-26, 1985.

Reynolds, R. G., "The Use of Expert Systems in Archaeology", International Union of Pre- and Proto-Historical Sciences, Denver, Colorado, April 29 - May 1, 1985, pp. 55-66.

Reynolds, R. G. and Cichanowski, G. "Distributed Algorithms for On-Line Bin Packing", Conference on Intelligent Systems and Machines, Oakland University, Rochester, Michigan, April 24, 1984.

Reynolds, R. G. and Cichanowski G., "A Parallel Algorithm for On-Line Bin Packing", SIAM 1983 Fall Meeting, Norfolk, Virginia, November 3 - 7, 1983.

Reynolds, R. G., "Metrics to Assess the Structural Complexity of Parallel

Programs", Symposium on Empirical Foundations of Software Science, Atlanta, Georgia, November 3-5, 1982, pp.188-200.

Reynolds, R. G. and Chang, T. L., "The PAL System: A Parallel Algorithm Design System for VLSI Based Architectures", Proceedings 10th International IMACS Conference, Montreal, Canada, August 8-13, 1982, pp. 314-319.

M. Invited Seminars or Lectures Presented:

“Approaches to Modeling: A Grand Tour”, to be presented at SFI Workshop on “The Cycles of Social and Environmental Complexity in Lowland Latin America”, Florianopolis, Santa Catarina, Brazil, May 24-28, 2005.

“Tutorial On Cultural Algorithms”, to be presented at IEEE Symposium of Swarm Intelligence, Palo Alto, CA, June 8-10, 2005..

“Agent-based Modeling of the Emergence of Social Complexity in the Mesa Verde region Using Cultural Algorithms”, University of Michigan, Museum of Anthropology Brown bag seminar Series, February 17, 2005.

“Simulating the Impact of Cultural Adaptation on the Resilience of Social Systems to Environmental Change: The Anazazi Example”, Department of Computer Science Seminar, Wayne State University, September 30, 2003.

“Modeling the Emergence of the Archaic State in the Valley of Oaxaca Using Cultural Algorithms”, Museum of Anthropology, University of Michigan, Ann Arbor, Michigan, September 25, 2003.

“A Multi-Agent Simulation Using Cultural Algorithms: The Effects of Culture on the Resilience of Social Systems”, Complex Systems Research Group, University of Michigan, Ann Arbor, June 18, 2003.

“Cultural Algorithms: A Tutorial”, IEEE Swarm Intelligence Symposium, Indianapolis Indiana, April 24, 2003.

“Modeling Intelligent Multi-Agent Systems”, invited talks at (SCP 7400, and CSC 5830), Wayne State University, Feb. 25 and 27, 2003.

“Computational Models of State Formation”, Dept. Of Anthropology Colloquium Series, Washington State University, Washington, December 6, 2002.

“Multi-Agent Simulation of Hunter-Gatherer Behavior”, Museum of

Anthropology, Quantitative Methods Seminar, University of Michigan, Ann Arbor, October, 2002.

“Problem Solving with Cultural Algorithms”, Ford Motor Company, E-Tech Seminar series, June 12, 2002.

“Cultural Algorithms: A Tutorial”, Reynolds, R.G., World Congress on Evolutionary Computation, Honolulu Hawaii, May 12, 2002.

“Assessing the Impact of Resource Access on Learning by Emulation in Hunter-Gatherer Foraging Systems: A Multi-Agent Model”, Dept. of Computer Science Colloquium Series, Wayne State University, April 9, 2002.

“Cultural Algorithms and Modeling Evolution in Multi-Agent Systems, Ford Motor Company, Scientific Research Laboratory, March 13, 2002.

“Using Decision Trees to Extract Warfare Rules in the Valley of Oaxaca, Mexico”, Museum of Anthropology, University of Michigan, Ann Arbor, October 28, 2001.

“Real-Valued Function Optimization Using Cultural Algorithms”, invited talk ACM Special Interest Group on Artificial Intelligence, May 12, 1999.

“The Impact of Raiding on Settlement Patterns in the Northern Valley of Oaxaca, Mexico, invited talk, Museum of Anthropology, University of Michigan, Ann Arbor, Michigan, March 11, 1999.

“Learning to Learn: Using Cultural Algorithms to Guide Decision Tree Learning in a Large Scale Archaeological Data Base”, Department of Computer Science Seminar, Wayne State University, October 21, 1998.

“Using Decision Trees to Recognize the Occurrence of Raiding in the Valley of Oaxaca”, Seminar on the Modeling of Long Term Social Processes, Sante Fe Institute, September 15-17, 1998.

“Automatic Diagnosis Using Cultural Algorithms”, SAE Control Society Spring Conference, Session of Diagnostic Problem Solving, invited talk May 11, 1998.

"A Comparison Between the Fisher Model and Cultural Algorithms", Royal University of Stockholm, Department of Computer Science, June 4, 1997.

"Using Artificial Intelligence to Analyze Occupation Floor Remains in the Valley

of Oaxaca, Mexico, University of Michigan, Museum of Anthropology Seminar
January 23, 1997.

" Solving Real-Valued Optimization Problems Using Cultural Algorithms",
Artificial Intelligence Group, Ford Motor Company, May 1, 1996.

"A Test bed for Solving Optimization Problems using Cultural Algorithms",
Department of Computer Science Professional Seminar Series, Wayne State
University, February 14, 1996.

"Culturing Genetic Algorithms", invited talk, Southeast Michigan ACM SIGART
Chapter, October 19, 1995.

"Cultural Algorithms and Their Applications", invited talk, Department of
Computer Science, Wayne State University, October 11, 1995.

"Computer Modeling of Cultural Adaptations, invited talk, Museum of
Anthropology, January 19, 1995.

"The Use of Artificial Intelligence Techniques to Analyze Occupation Floors in
Cueva Blanca, Mexico", invited talk, Museum of Anthropology, University of
Michigan, November 10, 1994.

"Future Trends in Software Quality", Professional Development Seminar, invited
talk, Department of Computer Science, Wayne State University, September 15,
1993.

"The Integration of AI, Database, and Software Engineering: Research Issues and
Practical problems, panel chair, 5th International Conference on Tools for
Artificial Intelligence, Cambridge, Massachusetts, November 8-11, 1993.

"Using Cultural Algorithms to Infer the Behavior of Boolean Circuits", invited
talk, IEEE Computer Society, Southeastern Michigan Region, Spring Meeting,
April 20, 1993.

"Future of Software Reuse", panel member, 4th International Conference on
Computers and Information, Toronto, Canada, May 25-27, 1992.

"Knowledge-Based Re Engineering of CVSP Software at Ford", invited talk, Ford
Engineering Computer Center, November 3, 1992.

"Software Reusability: Issues in Real Time Control Systems", invited talk, Software Technology Forum, Ford Motor Company, October 23, 1992.

"Automating Software Reuse", invited talk, University of Western Ontario, Department of Computer Science, October 15, 1992.

"Cultural Algorithms", invited talk, Metropolitan Detroit Chapter of ACM Special Interest Group on Artificial Intelligence, October 1, 1992.

"Extracting Procedural Knowledge from Software Systems Using Inductive Learning", invited talk, Dept. of Computer Science, Artificial Intelligence Seminar, Carnegie-Mellon University, April 28, 1992.

"Operationalizing Software Reuse as a Problem in Machine Learning", invited talk, Department Computer Science of Michigan State University, November 22, 1991.

"Modeling the Evolution of Cooperation", invited talk to Michigan Archaeological Society, April 10, 1991.

"Darwinian Models of Cultural Evolution", invited talk, Dept. of Evolution and Human Behavior, Univ. of Michigan, November 29, 1990.

"UNIX and AI" at Computer Solutions Exp., Third Midwest UNIX Exposition, Sept. 4-6, 1990, Dearborn, Michigan.

"Reasoning About Program Design in Computer Aided Software Engineering Environments", Metropolitan Detroit Chapter of SIGART (ACM Special Interest Group on Artificial Intelligence), September 28, 1988.

ACM Chapter Professional Development Seminar Speaker, 1986-1987.

"Application of Artificial Intelligence Techniques to Software Engineering", Metropolitan Detroit Chapter of the ACM (Sept. 22, 1986).

"Expert Systems and Artificial Intelligence", ACM Professional Development Seminar, May 1986.

N. Other Scholarly Work:

1. Professional Workshops Attended:

University of Michigan/Sante Fe Institute Workshop on Emergence and Engineering in Complex Systems, University of Michigan, Ann Arbor, November 12-14, 2003.

Workshop on Mobility in a Sustainable World: A Complex Systems Approach, University of Michigan, Ann Arbor, June 20-22, 2003.

Sante Fe Workshop on Human Environmental Interaction, May 17-19, 2003.

Abisko Scientific Research Station Workshop on "Emergence, Transformation, and Decay in Socio-Natural Systems, Sponsored by Swedish Research Council, Abisko, Sweden, May 19-23, 2001.

Santa Fe Institute Workshop on "Modeling Human-Environmental Interaction", Santa Fe, New Mexico, December 7-9, 2000.

Santa Fe Institute Workshop on "Modeling the Emergence of Large-Scale Multi-Agent Systems, Charlotte, North Carolina, November 10-12, 1999.

Santa Fe Institute Workshop and Conference on "Modeling the Dynamics of Agent Interactions in Small-Scale Social Systems", September 14-17, 1998.

Sante Fe Institute Workshop on "Modeling Small-Scale Intelligent Agent Systems, Sante Fe, New Mexico, December 3-6, 1997

Cooperstown I Workshop on "Creating a National Vision and Force in Software Through Software Measurement", Cooperstown, New York, August 29-September 1, 1993.

Workshop on Modeling Prehistoric Human Behavior, Cambridge Univ., England, December 10-14, 1990.

Santa Fe Institute Workshop on Modeling the Evolution of Prehistoric Southwestern Societies, Santa Fe, New Mexico, Sept. 30 - Oct. 5, 1990.

2. Reviewer:

2005

AI 2005 (6 papers).

FLAIRS 2005 (Machine Learning Special Track).
FIRA 2005.
IEEE Congress on Evolutionary Computation (6 papers).
IEEE Journal of Systems, Man, and Cybernetics (2 paper).
IEEE Transactions on Evolutionary Computation (3 papers).
IEEE Information Management and Reuse (6 papers).
Structure and Dynamics: eJournal of Anthropological and Related Sciences (1 paper).

2004

FLAIRS 2004 (8 papers).
FLAIRS 2004 Machine Learning Special Track (4 papers)
AI 2004 Conference, (5 papers).
Journal of Computational Mathematical and Organization Theory (3 papers).
ICTAI 2004 (8 papers).
IEEE Conference on Evolutionary Computation (12 papers).
IEEE Transactions on Evolutionary Computation (10 papers).
IEEE Transactions on Knowledge Engineering and Software Engineering (1 paper).
IEEE Transactions on Systems, Man, and Cybernetics (1 paper).
International Journal of Artificial Intelligence Tools (2 papers).
National Science Foundation Panelist (3 proposals).
Journal of Anthropological Archaeology (3 papers).
Journal of Archaeological Science (1 paper).
Parallel Processing in Nature (PPSN) (6 papers).

2003

ACM Journal on Multimedia Systems: Special Issue on Multimedia Software Engineering (5 papers)
Foundations of Evolutionary Algorithms 2003 (1 paper)
Florida AI Research Conference 2003 (7 papers)
GECCO 2003 (4 papers) .
IEEE Transactions on Evolutionary Computation (8 papers)
IEEE Transactions on Software Engineering (2 paper)
IEEE Transactions on Evolutionary Computation (Special Issue on Particle Swarm Optimization) 9 papers.
International Conference on Artificial Intelligence Tools, 2003 (8 papers).
Journal of Anthropological Archaeology (2 papers).
Journal of Soft Computing (3 papers).

NASA Panelist on Control Systems and Systems Integration, Modeling and Analysis (6 proposals).

National Science Foundation Proposal Review (2 proposals).

NSF New Investigators Award Panel Review (1 application).

2002

Foundations of Evolutionary Algorithms 2002 (3 papers).

Genetic and Evolutionary Computation Conference, GECCO 2002 (5 papers).

IEEE Transactions on Evolutionary Computation 2002 (11 papers).

Journal of Anthropological Archaeology 2002 (3 papers).

Parallel Processing in Nature (4 papers) 2002.

World International Congress on Computational Intelligence, 2002 (10 papers).

International Conference on Artificial Intelligence Tools, 2002, (4 papers).

Multimedia Software Engineering, 2002, (3 papers).

2001

2001 Congress on Evolutionary Computation (10 papers).

Foundation of Evolutionary Algorithms (4 papers).

GECCO 2001 (10 papers).

IEEE Transactions on Evolutionary Computation (4 papers).

IEEE Transactions on Knowledge Engineering and Data Engineering (30 papers).

IEEE Transactions on Systems, Man, and Cybernetics, Part B:.

Information Sciences: An International Journal (1 paper).

Parallel Processing in Nature (4 papers).

2000

2000 Congress on Evolutionary Computation

GECCO 2000.

IEEE Transactions on Evolutionary Computation

IEEE Transactions on Knowledge Engineering and Data Engineering

1999

Journal of Anthropological Archaeology

IEEE Computer

IEEE Software

IEEE Transactions on Evolutionary Computation

IEEE Transactions on Pattern Recognition and Machine Intelligence

IEEE International Congress on Evolutionary Computation
GECCO, Genetic and Evolutionary Computation Conference
International Journal of Artificial Intelligence Tools

1998

Journal of Anthropological Archaeology
Genetic Programming Conference
IEEE Computer
IEEE Software
IEEE Transactions on Evolutionary Computation
IEEE Transactions on Pattern Recognition and Machine Intelligence
IEEE International Conference on Artificial Intelligence Tools
International Conference on Computers and Information Systems
International Conference on Parallel Processing in Nature
International Conference on Evolutionary Computation
International Journal of Anthropological Archaeology
International Journal of Artificial Intelligence Tools

1997

Biosystems
IEEE Computer
IEEE Software
IEEE Transactions on Evolutionary Computation
IEEE Transactions on Knowledge Engineering and Data Engineering
IEEE Sixth Evolutionary Programming Conference
International Conference on Genetic Algorithms
International Journal of Software Engineering and Knowledge Engineering

1996

Bio-systems
COMPSAC 1996
Fourth Golden West Conference on Intelligent Systems
ICCI (International Conference on Computers and Information)
IEEE Fifth Evolutionary Programming Conference
IEEE Transactions on Knowledge and Data Engineering
IEEE Software
Information Sciences Journal
International Conference on Software Engineering and Knowledge Engineering

International Journal of Artificial Intelligence Tools
Michigan Academician

1995

ACM Annual Computer Science Conference
Bio-systems
Computational Intelligence
ICCI (International Conference on Computers and Information)
IEEE Fourth Conference on Evolutionary Computing
IEEE Software
IEEE Transactions on Knowledge and Data Engineering
IEEE Second International Conference on Evolutionary Computation
International Conference on Evolutionary Programming
International Conference on Software Engineering and Knowledge Engineering
International Journal of Artificial Intelligence Tools

1994

ACM Annual Computer Science Conference, 1995
Bio-systems
International Journal of Mathematics and Statistics
International Journal of Modeling and Simulation
IEEE Expert
IEEE Software
IEEE 6th International Conference on Tools for AI
Evolutionary Programming Conference
International Conference on Intelligent Systems and Methodologies
6th International Conference on Software Engineering and Knowledge Engineering
IEEE Transactions on Neural Networks
Canadian National Software Engineering Research Council Proposals
International Journal of Tools for Artificial Intelligence
International Journal of Software Engineering and Knowledge Engineering

1993

ACM Annual Computer Science Conference, 1994
IEEE Expert
IEEE Software
IEEE Computer
IEEE 5th International Conference on Tools for AI

Evolutionary Programming 94
5th International Conference on Software Engineering and Knowledge Engineering
IEEE Transactions on Software Engineering
IEEE On-Line Encyclopedia
International Journal of Tools for Artificial Intelligence
International Journal of Software Engineering and Knowledge Engineering
International Journal of Software Engineering
Bio-systems
Journal of Anthropological Archaeology

1992

ACM Annual Computer Science Conference
IEEE Expert
IEEE Software
IEEE 4th International Conference on Tools for AI
Evolutionary Programming 94
4th International Conference on Software Engineering and Knowledge Engineering
IEEE Transactions on Software Engineering
International Journal of Tools for Artificial Intelligence
International Journal of Software Engineering and Knowledge Engineering

1991

ACM Annual Computer Science Conference
IEEE Expert
IEEE Software
IEEE Computer
IEEE 3rd International Conference on Tools for AI
3rd International Conference on Software Engineering and Knowledge Engineering
IEEE Transactions on Software Engineering
International Journal of Tools for Artificial Intelligence
International Journal of Software Engineering and Knowledge Engineering
International Journal of Anthropological Archaeology

1990

ACM Annual Computer Science Conference
IEEE Expert
IEEE Software

IEEE 2nd International Conference on Tools for AI
2nd International Conference on Software Engineering and Knowledge
Engineering
International Journal of Systems and Software

1989

ACM Annual Computer Science Conference
IEEE Expert
IEEE Software
IEEE 1st International Conference on Tools for AI
1st International Conference on Software Engineering and Knowledge Engineering
International Journal of Systems and Software

IV. SERVICE

A. Administrative Appointments at Wayne State in the last seven years:

Interim Chair Department of Computer Science, 1990-1992.

C. Committee Assignments:

2. University Committees:

Student Center Advisory Committee, 1997-2002
Faculty Senate Standing Committee on Faculty Affairs, 1994
Faculty Senate, 1994.
Scholarships and Fellowships Review Panel, 1992 – 1993.
Faculty Senate Committee on Student Employment, 1992 – 1993.
Computing Resources Task Force, 1991.
Selection Committee University Wide Equipment Grant, 1987.
University Telecommunications Committee, 1987.

3. College/Department Committees Chaired

CSC Undergraduate Committee, 1997-2003.
CSC Faculty Search Committee, 1989.
CSC Ph.D. Qualifying Exam Committee, 1986-1987.

4. College/Departmental Committee Membership:

CSC Departmental Bylaws Committee, 2004-2005.
CSC Graduate Committee, 2004-2005.
College of Science Faculty Council, 2001-2005.
College of Science Promotion and Tenure Committee, 2000-2005.
College of Science Undergraduate Committee, 2000-2003.
CSC Undergraduate Committee, 1996-present.
CSC Personnel and Salary Committee, 1993-1998, 2000, 2003-2004.
CSC Graduate Committee, 1995-1996.
CSC Recruitment and Retention Committee, 1993-1994.
CSC Promotion and Tenure Committee, 1989-2004.
CSC Chair Search Committee, 1990
CSC Ford/ WSU-EE/CS Interdisciplinary Masters Curriculum Committee, 1988
CSC Ford/WSU-EE/CS Interdisciplinary Masters Planning Committee 1988-1989
CSC Personnel and Salary Committee, 1988 (Fall)
CSC Equipment Committee, 1988
CSC Departmental Chair Search Committee, 1985
CSC Graduate Committee, 1983-1988

D. Positions Held in Professional Associations in Past Five Years:

Treasurer, National Autonomous Agents and Computational Analysis of Social and Organizational Systems (NAACSOS), 2005-present.

Member, IEEE Neural Network Council Publications Board, 1999-present.

Vice President, Evolutionary Programming Society, 2001-2004.

Voted Member-At-Large, Evolutionary Programming Society, 1994-2001.

Vice-President, Southeastern Metropolitan Chapter of the ACM Special Interest Group on Artificial Intelligence, 1992-1993.

President, Southeastern Michigan Metropolitan Chapter of the ACM Special Interest Group on Artificial Intelligence, 1989, 1998.

E. Professional Consultation:

1. Public Presentation as an Expert in Discipline:

Interview on Expert Systems, Crane's Detroit Business, February 6, 1989

4. Consulting in Private Enterprises:

Academic Press
Addison-Wesley Publishing Company
Holt, Rinehart and Winston Publishing Company
McMillan Publishing West
MIT Press
Prentice Hall
Kluwer Academic Press
Plenum Press
World Scientific Press

G. Journal/Editorial Activity:

1. Editorships:

Editor, Computational and Mathematical Organization Theory (Computational Sociology and Social Computation), 2004-present.

Associate Editor, IEEE Transactions on Knowledge Engineering and Data Engineering, 1999-2001.

Associate Editor, IEEE Transactions on Evolutionary Computation, 1996-present.

Associate Editor, International Journal on Artificial Intelligence Tools, 1991-present

2. Journal Editorial Board Memberships:

Journal of Knowledge Engineering and Software Engineering, 1991-present

International Journal of Science & Technology, 1989-1996

H. Other Professionally Related Activities:

1. Conference Chair Positions:

Plenary Speakers Chair, 2004 IEEE Conference on Evolutionary Computation,

Portland, Oregon, June 19-24, 2004.

Technical Program Chair, 2003 IEEE International Conference on Evolutionary Computation, December 10-13, Canberra, Australia, 2003.

Publicity Chair, 2001 World Congress on Evolutionary Computation, Seoul, Korea, May 27-29, 2001.

Financial Chair, First World Congress on Evolutionary Computation, 1999, Washington, D. C., July 6-10.

Co-Chair of the Technical Program, 1997 IEEE International Conference on Tools for Artificial Intelligence, November 1997, Newport Beach, California.

Co-Chair of the Technical Program, Sixth International Conference on Evolutionary Programming, 1997, Indianapolis Indiana.

Workshop Chair, 7th IEEE International Conference on Knowledge Engineering, 1995.

Co-Chair of the Technical Program, International Conference on Evolutionary Programming, 1995.

Program Vice Chair, 5th International IEEE Conference on Tools for AI, 1993 (Knowledge-Based Systems and Architectures).

Publicity Chair, 3rd International Conference on Tools for AI, 1991 (Co-Chair).

2. Conference Program Committees Served On:

2008 World Congress on Computational Intelligence

2006 Canadian AI Conference

2006 First World Congress on Social Simulation.

2005 AAAI Florida Artificial Intelligence Conference (FLAIRS)

2005 Canadian AI National Conference.

2004 IEEE International Conference on Tools in Artificial Intelligence

2004 Parallel Processing in Nature

2004 AAAI Florida Artificial Intelligence Conference FLAIRS Conference

2004 AAAI FLAIRS Special Track on Machine Learning

2004 IEEE Congress on Evolutionary Computation

2004 GECCO Conference

2004 IEA/AIE 2004

2003 IEEE Congress on Evolutionary Computation

2003 IEEE Tools for Artificial Intelligence

2003 IEEE Symposium on Swarm Intelligence

2003 AAAI FLAIRS Conference

2003 Genetic and Evolutionary Computation Conference (GECCO)

2003 Foundations of Evolutionary Algorithms

2002 International Conference on Tools for Artificial Intelligence

2002 Multimedia Software Engineering

2002 Genetic and Evolutionary Computation Conference (GECCO)

2002 IEEE World Conference on Computational Intelligence (WCCI)

2002 Conference on Parallel Processing in Nature

2002 Foundations of Evolutionary Algorithms

2001 Genetic and Evolutionary Computation Conference GECCO

2001 Congress on Evolutionary Computation

2000 Congress on Evolutionary Computation

2000 Genetic and Evolutionary Computation Conference GECCO

2000 IEEE Tools for Artificial Intelligence

2000 Foundation of Evolutionary Algorithms (FEA 2000)

2000 Integrated Design and Process Technology

1999 IEEE Tools for Artificial Intelligence

1999 Evolutionary Computational Systems

1999 IEEE International Congress on Evolutionary Computation

1999 Genetic and Evolutionary Computation Conference (GECCO)

1998 Second International Conference on Evolutionary Algorithms and Artificial Life (SEAL)

1998 Parallel Processing in Nature (PPSN)

1998 5th International Conference on Parallel Processing in Nature

1998 7th International Conference on Evolutionary Programming

1998 IEEE International Conference on Evolutionary Computation

1998 International Conference on Computers and Information Processing (ICCI)

1997 International Conference on Genetic Algorithms

1996 COMPSAC

8th International Conference on Software Engineering and Knowledge Engineering, 1996.

4th International Golden West Conference on Intelligent Systems, 1995.

International Conference on Tools with Artificial Intelligence, 1995.

7th International Conference on Software Engineering and Knowledge Engineering, 1995

IEEE Conference on Evolutionary Computing, 1995.

1st IEEE International Symposium on Intelligence in Neural and Biological Systems, 1995.

7th International Conference on Computing and Information, 1995.

6th IEEE International Conference on Software Engineering and Knowledge Engineering, 1994.

6th International Conference on Tools for Artificial Intelligence, 1994.

4th Annual Conference on Artificial Intelligence, Simulation, and Planning in High Autonomy Systems: Integrating Virtual Reality and Model-Based Environments, 1993.

5th IEEE International Conference on Software Engineering and Knowledge Engineering, 1993.

4th IEEE International Conference on Computers and Information, 1992.

3rd International Conference on Tools for AI, 1991.

2nd International Conference on Software Engineering and Knowledge Engineering, 1990.

2nd International Conference on Tools for AI, 1990.

3. Session Chair:

“Model Sensitivity”, Chair, International Conference on Geo-computation 2005,

“Machine Learning II”, Chair, IEEE ICTAI 2004, Boca Raton, FL, November 15-17, 2004.

“Applications of Cultural Algorithms in Industry and Engineering”, Chair, IEEE

Congress on Evolutionary Computation, Portland, OR, June 19-23, 2004.

“Cultural Algorithms”, Chair, IEEE Congress on Evolutionary Computation, Canberra, Australia, 2003.

“New Models”, Co-Chair with Tomohiro Yoshikawa, IEEE Systems, Man, and Cybernetics Conference, Washington, D.C., 2003.

“Sustainable Mobility Perspective III”, Workshop on Mobility in a Sustainable World: A Complex Systems Approach, University of Michigan, Ann Arbor, Michigan, June 20-22, 2003.

“Real World Applications of Evolutionary Computation II”, World Congress on Computational Intelligence, Honolulu, Hawaii, 2002.

“Evolution-Based Approaches to Multi-Agent Systems I (co-chair with N. Rychtyckj, World Congress on Computational Intelligence, Honolulu, Hawaii, 2002.

“Evolution-Based Approaches to Multi-Agent Systems II (co-chair with N. Rychtyckj, World Congress on Computational Intelligence, Honolulu, Hawaii, 2002.

“Artificial Life, Adaptive Behavior, and Agents”, GECCO 2001, San Francisco, CA.

“Real-World Applications”, Genetic and Evolutionary Computation Conference (GECCO) 2001, San Francisco, CA.

“Multi-Agent Systems and Cultural Algorithms”, 2000 Congress on Evolutionary Computation.

“Agent-Based Learning”, IEEE Tools with Artificial Intelligence, 1999.

“Cultural Algorithms I”, IEEE International Congress on Evolutionary Computation, 1999.

“Cultural Algorithms II”, IEEE International Congress on Evolutionary Computation, 1999.

“Evolution-Based Approaches to Engineering Design”, Evolutionary

Programming Conference, 1998, organizer.

"Selection Strategies I", International Conference on Genetic Algorithms, 1997

"Evolutionary Learning in Hierarchical Systems", co-chair with Michael Conrad, Evolutionary Programming Conference, 1996, co-organizer.

"Artificial Life", 2nd IEEE Conference on Evolutionary Computation, 1995.

"Machine Learning", 2nd IEEE Conference on Evolutionary Computation, 1995

"Evolution Based Approaches to Software Engineering", Panel Session, International Conference on Software Engineering and Knowledge Engineering, 1995.

"Neural Networks", 7th International Conference on Tools for Artificial Intelligence 1994.

"Cultural Algorithms", 3rd Annual Conference On Evolutionary Programming, 1994.

"Evolutionary Problem Solving in Hierarchical Systems" at Second International Conference on Evolutionary Programming, 1993.

"AI Knowledge Based Architectures", 5th International Conference on Tools for Artificial Intelligence, 1993.

"Software Reuse", 5th International Conference on Software Engineering and Knowledge Engineering, 1993.

"Interactive Systems", 2nd International Conference on Tools for Artificial Intelligence, 1990.

"Machine Learning", 2nd International Conference on Tools for Artificial Intelligence, 1990.

"Query Languages", 1st International Conference on Knowledge Engineering and Software Engineering, 1989.

4. Seminar Organization:

Faculty Advisor for the Wayne State University student chapter of the ACM, 1985-1988.

Contributor to the ACM Professional Development Seminar Handbook, 1986; An Outline for a course on Expert Systems.