

Thomas M. English, Ph.D.

**Multicore Consultancy
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Education

Doctor of Philosophy in Computer Science

Mississippi State University, 1990

Master of Science in Computer Science

Mississippi State University, 1988

Master of Arts in English

Mississippi College, 1984

Bachelor of Arts in Psychology (with High Honors)

Mississippi College, 1978

Areas of Interest

Teaching

Machine intelligence, programming, data structures, algorithm analysis, discrete mathematics, theory of computation

Research

Machine intelligence, evolutionary computation, optimization, forecasting, parallel processing

Professional Positions

Consultant and Software Developer

Doing business as Multicore Consultancy, 2011-present

Specializing in software for multicore architectures

Researcher and Software Developer

Doing business as Bounded Theoretics, 2003-2011

Specializing in forecasting, optimization, and parallel processing

Resource Faculty Member

Eastern New Mexico University, Spring 2009

Online instruction

Associate Professor

Jackson State University, 2001-2003

Researcher and Software Developer

Doing business as The Tom English Project, 1998-2001

Assistant Professor

Texas Tech University, 1990-1998

Lecturer

Mississippi State University, 1988-1990

Graduate Assistant

Mississippi State University, 1987-1988

Programmer

USDA Agricultural Research Service, Crop Simulation Unit, 1985-1986

Graduate Assistant

Mississippi State University, 1983-1986

Professional Service**Member**

Institute of Electrical and Electronics Engineers (Senior Member, 2005)

IEEE Computational Intelligence Society

Associate Editor

IEEE Transactions on Evolutionary Computation, 2001-2003

Tutorials Chair

2004 Congress on Evolutionary Computation (CEC 2004), Portland

Technical Chair

2001 International Symposium on Adaptive Systems (ISAS 2001), Havana (with H. Mühlenbein and P. Larrañaga)

Task Force Member

IEEE Computational Intelligence Society Task Force on Coevolution, 2003-present

IEEE Computational Intelligence Society Task Force on Evolutionary Gaming, 2002-present

Conference Session Organizer

“Theory and Foundation of Evolutionary Computation,” 2001 Congress on Evolutionary Computation (CEC2001), Seoul (with D. B. Fogel)

“Theory and Foundation of Evolutionary Computation,” 2000 Congress on Evolutionary Computation (CEC2000), San Diego (with D. B. Fogel)

Tutorial Lecturer

“Introduction to ‘No Free Lunch’ in Optimization and Learning,” 2001 Congress on Evolutionary Computation (CEC2001), Seoul

“No Free Lunch: A Gentle Introduction to Conservation in Optimization and Learning,” Sixth International Conference on Parallel Problem Solving from Nature (PPSN VI), Paris, 2000

Referee

Journal of Combinatorial Optimization (2011)

International Journal of Bio-Inspired Computation (2011)

IEEE Transactions on Evolutionary Computation (2010, 2005, 2004, 2001, 1997, 1996)

Theoretical Computer Science (2008)

Data Mining and Knowledge Discovery (2008)

BioSystems (2005, 1995, 1994)

Optical Engineering (2000)

IEEE Transactions on Neural Networks (1993, 1992)

Technical Editor

D. B. Fogel, 1998. *Evolutionary Computation: The Fossil Record*, IEEE Press.

Technical Reviewer

D. B. Fogel, 1995. *Evolutionary Computation: Toward a New Philosophy of Machine Intelligence*, IEEE Press.

Program Committee Member

2011 IEEE Congress on Evolutionary Computation (CEC 2011), New Orleans

Eleventh International Conference on Parallel Problem Solving from Nature (PPSN 2010), Krakow, Poland

2010 World Congress on Computational Intelligence (WCCI 2010), Barcelona, Spain

2009 IEEE Congress on Evolutionary Computation (CEC09), Trondheim, Norway

Tenth International Conference on Parallel Problem Solving from Nature (PPSN X), Dortmund, Germany, 2008

2008 IEEE World Congress on Computational Intelligence (WCCI2008), Hong Kong

2007 IEEE Congress on Evolutionary Computation (CEC07), Singapore

2007 IEEE Symposium on Computational Intelligence and Games (CIG'07), Honolulu

Ninth International Conference on Parallel Problem Solving from Nature (PPSN IX), Reykjavik, Iceland, 2006

2006 Congress on Evolutionary Computation (CEC2006), Vancouver, British Columbia

MENDEL 2006: 12th International Conference on Soft Computing, Brno, Czech Republic

2006 IEEE Symposium on Computational Intelligence and Games (CIG'06), Reno

2005 Congress on Evolutionary Computation (CEC2005), Edinburgh, Scotland

MENDEL 2005: 11th International Conference on Soft Computing, Brno, Czech Republic

2005 IEEE Symposium on Computational Intelligence and Games (CIG'05), Essex, UK

2004 Congress on Evolutionary Computation (CEC2004), Portland

Applications and Science of Neural Networks, Fuzzy Systems, and Evolutionary Computation VII (part of SPIE's International Symposium on Optical Science and Technology), Denver, 2004

MENDEL 2004: 10th International Conference on Soft Computing, Brno, Czech Republic

2003 Congress on Evolutionary Computation (CEC2003), Canberra, Australia

Applications and Science of Neural Networks, Fuzzy Systems, and Evolutionary Computation VI (part of SPIE's International Symposium on Optical Science and Technology), San Diego, 2003

MENDEL 2003: Ninth International Conference on Soft Computing, Brno, Czech Republic

The 6th World Multiconference on Systemics, Cybernetics and Informatics (SCI 2002), Orlando

Applications and Science of Neural Networks, Fuzzy Systems, and Evolutionary Computation V (part of SPIE's International Symposium on Optical Science and Technology), Seattle, 2002

MENDEL 2002: Eighth International Conference on Soft Computing, Brno, Czech Republic

2002 Congress on Evolutionary Computation (CEC 2002), Honolulu

Applications and Science of Neural Networks, Fuzzy Systems, and Evolutionary Computation IV (part of SPIE's International Symposium on Optical Science and Technology), San Diego, 2001

The 5th World Multiconference on Systemics, Cybernetics and Informatics (SCI 2001), Orlando

Seventh International Mendel Conference on Soft Computing (MENDEL 2001), Brno, Czech Republic

2001 Congress on Evolutionary Computation (CEC 2001), Seoul, Korea

2001 Symposium on Adaptive Systems (ISAS 2001), Havana, Cuba

2000 Congress on Evolutionary Computation (CEC 2000), San Diego

Sixth International Conference on Parallel Problem Solving from Nature (PPSN VI), Paris, 2000

Applications and Science of Neural Networks, Fuzzy Systems, and Evolutionary Computation III (part of SPIE's 45th Annual Meeting on Optical Science, Engineering, and Instrumentation), San Diego, 2000

Sixth International Mendel Conference on Soft Computing (MENDEL 2000), Brno, Czech Republic

1999 Congress on Evolutionary Computation (CEC99), Washington, DC

Fifth International Mendel Conference on Soft Computing (MENDEL '99), Brno, Czech Republic

Seventh Annual Conference on Evolutionary Programming (EP98), San Diego

Fourth International Mendel Conference on Genetic Algorithms, Optimization Problems, Fuzzy Logic, Neural Networks, and Rough Sets (MENDEL '98), Brno, Czech Republic

Sixth Annual Conference on Evolutionary Programming (EP97), Indianapolis

Third International Conference on Genetic Algorithms (MENDEL '97), Brno, Czech Republic

Fifth Annual Conference on Evolutionary Programming (EP96), San Diego

Second International Conference on Genetic Algorithms (MENDEL '96), Brno, Czech Republic

IEEE 1995 International Conference on Evolutionary Computation (ICEC95), Perth, Australia

Fourth Annual Conference on Evolutionary Programming (EP95), San Diego

First International Conference on Genetic Algorithms (MENDEL '95), Brno, Czech Republic

Grants Received

“Collaborative Project: A Cyber Service Scholarship Proposal,” Principal Investigator, 2002-2003 (National Science Foundation, \$222,074)

“Collaborative Project: Expansion and Enhancement of the Center of Excellence in Information Assurance Program,” Principal Investigator, 2002-2003 (National Science Foundation, \$127,527)

“Completion and Demonstration of the Hybrid Modeling Facility Prototype,” Principal Investigator, 1994-1995 (FSI International, \$77,093)

“Mitigation of Hurricane Damage to Constructed Facilities,” Co-Principal Investigator (K. C. Mehta, PI), 1994-1995 renewal. (National Science Foundation, \$45,207)

“Study of Fundamental Issues in the Hybrid Modeling Facility,” Principal Investigator, 1993-1994 (FSI International, \$75,446)

“Mitigation of Hurricane Damage to Constructed Facilities,” Co-Principal Investigator (K. C. Mehta, PI), 1993-1994 renewal. (National Science Foundation, \$45,826)

“Mitigation of Hurricane Damage to Constructed Facilities,” Co-Principal Investigator (K. C. Mehta, PI), 1992-1993. (National Science Foundation, \$21,552)

“Development of a Hybrid Modeling Facility for the FSI Generic Semiconductor Control System,” Principal Investigator (50% of responsibilities were assumed by Hua Li), 1992-1993. (FSI International, \$150,952)

“Advanced Techniques for Modeling Human Performance in Computerized and Automated Systems,” Faculty Associate (M. M. Ayoub, PI), 1992-1993. (State of Texas, \$19,800)

“Generic Cluster Controller Software Development,” Co-Principal Investigator (W. M. Marcy, PI), 1991-1992. (FSI International, \$142,668)

“A Generic Approach for Advanced Equipment Control Systems,” Co-Principal Investigator (W. M. Marcy, PI), 1991-1992. (State of Texas, \$49,064)

Edited Volume

A. Ochoa, H. Mühlenbein, T. English and P. Larrañaga, editors, 2001. *Proceedings of International Symposium on Adaptive Systems: Evolutionary Computation and Probabilistic Graphical Models (ISAS 2001)*.

Chapter in Edited Volume

T. English and G. Greenwood, 2008. "Intelligent Design and Evolutionary Computation," in *Design by Evolution—Advances in Evolutionary Design*, P. F. Hingston, L. C. Barone, and Z. Michalewicz, editors. Springer.

Refereed Publications

"No More Lunch: Analysis of Sequential Search," *Proceedings of the 2004 IEEE Congress on Evolutionary Computation*, pp. 227-234, 2004.

"On the Structure of Sequential Search: Beyond 'No Free Lunch,'" *Evolutionary Computation in Combinatorial Optimization, Proceedings of the 4th European Conference, EvoCOP 2004*, pp. 95-103, 2004.

"Learning to Focus Selectively on Possible Lines of Play in Checkers," *Proceedings of the 2001 Congress on Evolutionary Computation: CEC01*, pp. 1019-1024.

"Coevolutionary Learning of Selective Extensions in Game Tree Search: Preliminary Results," *Proceedings of International Symposium on Adaptive Systems: Evolutionary Computation and Probabilistic Graphical Models (ISAS 2001)*, pp. 56-63, 2001.

"Practical Implications of New Results in Conservation of Optimizer Performance," *Parallel Problem Solving from Nature: PPSN VI*, pp. 69-78, 2000.

"Ranking Models for Combination," *Proceedings of SPIE: Applications and Science of Neural Networks, Fuzzy Systems, and Evolutionary Computation III*, pp. 162-169, 2000.

"Optimization Is Easy and Learning Is Hard in the Typical Function," *Proceedings of the 2000 Congress on Evolutionary Computation: CEC00*, pp. 924-931, 2000.

"Some Information Theoretic Results on Evolutionary Optimization," *Proceedings of the 1999 Congress on Evolutionary Computation: CEC99*, pp. 788-795, 1999.

"The Modeling of Expertise: The Use of Situation Models for Knowledge Engineering," *International Journal of Cognitive Ergonomics*, 1(2), pp. 119-136, 1997. (M. R. Endsley, T. M. English, and M. Sundararajan)

"Some Geometric and Algebraic Results on Crossover," in *Evolutionary Programming VI*, pp. 285-295, 1997.

"Nonlinear Combination of Neural Networks From a Diverse and Evolving Population," in *Integrating Multiple Learned Models (IMLM-96)*.

"Evaluation of Evolutionary and Genetic Optimizers: No Free Lunch," in *Evolutionary Programming V: Proceedings of the Fifth Annual Conference on Evolutionary Programming*, pp. 163-169, 1996.

"Stacked Generalization and Simulated Evolution," *BioSystems*, 39(1), pp. 3-18, 1996.

"Evolution and Nonlinear Combination of Diverse Models," in *Mendel '95: First International Conference on Genetic Algorithms*, pp. 41-46, 1995.

"The Effects of Generating More Offspring for Less Fit Parents," in *Evolutionary Programming IV: Proceedings of the Fourth Annual Conference on Evolutionary Programming*, pp. 437-47, 1995.

(H. P. Haiduk, M. Ahn, J. Burgin, M. Gotesman, H. Lyra, H. W. Means, J. Monroe, S. Patro, and T. English)

“Stacked Generalization and Fitness Ranking in Evolutionary Algorithms,” *Evolutionary Programming IV: Proceedings of the Fourth Annual Conference on Evolutionary Programming*, pp. 205-218, 1995. (T. M. English and M. Gotesman)

“Development of a Novel Method of Knowledge Engineering for the Creation of Hybrid Automation,” *Fourth International Conference on Human Aspects of Advanced Manufacturing and Hybrid Automation*, 1994. (M. R. Endsley, T. M. English, and M. Sundararajan)

“Situation Awareness Assessment as a Means of Defining Learning Tasks for Neural Networks,” *International Symposium on Integrating Knowledge and Neural Heuristics*, pp. 237-44, 1994. (T. M. English, M. R. Endsley, and M. Sundararajan)

“A Hybrid Modeling Facility for Networks of Controllers,” *Proceedings of the 1994 International Fuzzy Systems and Intelligent Control Conference*, pp. 16-24, 1994. (P. M. R. Durai, T. M. English, and J. R. Burgin)

“Generalization in Populations of Recurrent Neural Networks,” *Proceedings of the Third Annual Conference on Evolutionary Programming*, pp. 26-33, 1994.

“A Comparison of Neural Network and Nearest-Neighbor Classifiers of Handwritten Lower-Case Letters,” *1993 IEEE International Conference on Neural Networks*, pp. 1618-21, 1993. (T. M. English, M. del P. Gomez-Gil, and W. J. B. Oldham)

“Back-Propagation Training of a Neural Network for Word Spotting,” *ICASSP-92: 1992 IEEE International Conference on Acoustics, Speech, and Signal Processing*, vol. II, pp. 357-60, 1992. (T. M. English and L. C. Boggess)

“Implementation of Massively Parallel Genetic Algorithms on the MasPar MP-1,” *Proceedings of the 1992 ACM/SIGAPP Symposium on Applied Computing*, pp. 1015-20, 1992. (A. M. Logar, E. M. Corwin, and T. M. English)

“Efficient Classification of Frequent Words in Dictation,” *Proceedings: 26th Annual [ACM] Southeast Regional Conference*, J. H. Cross and E. Ellis, editors, pp. 536-42, 1988.

“Fast Preclassification of Frequent Words in Dictation,” *Proceedings AVIOS '88: Voice I/O Systems Applications Conference*, unpaginated, 1988. (T. M. English and L. C. Boggess)

“The HWYE Speech Recognition System: A User-Specific Model for Expectation-Based Recognition,” *Proceedings of the ACM Southeast Regional Conference*, pp. 9-15, 1987. (L. C. Boggess and T. M. English)

“A Grammatical Approach to Reducing the Statistical Sparsity of Language Models in Natural Domains,” *ICASSP 86 Proceedings: IEEE-IECEJ-ASJ International Conference on Acoustics, Speech, and Signal Processing*, pp. 1141-44, 1986. (T. M. English and L. C. Boggess)

Solicited Book Reviews

“Review of ‘Evolutionary Programming VI,’” solicited by D. B. Fogel, Editor-in-Chief, *IEEE Transactions on Evolutionary Computation*, 1(3):218-19.

“Review of ‘Proceedings of the Third Annual Conference on Evolutionary Programming,’” solicited by D. B. Fogel, Associate Editor, *BioSystems*, 36(1):79-82, 1995.

Published Abstracts

“Compact Input Coding for Speech Recognition by Neural Net,” abstract in *Proceedings: 1990 ACM Eighteenth Annual Computer Science Conference*, p. 444, 1990. (T. M. English and L. C. Boggess)

“Facilitating Speech Recognition with Automatically Generated ATN’s, Theme Identifiers, and Syntax Analyzers,” abstract in *Proceedings of the 1985 ACM Computer Science Conference*, 1985. (T. M. English and L. C. Boggess)

Invited Workshop Presentations

“Theory of Evolutionary Programming,” invited by P. J. Angeline, organizer of the “Evolutionary Programming” workshop, International Conference on Genetic Algorithms, 1997.

“A Polynomial Generator,” invited by W. Spears, co-organizer of the “Test Function Generators” workshop, International Conference on Genetic Algorithms, 1997.

Other Presentations

“Overview of the FSI Hybrid Modeling Facility,” presentation at the SEMATECH AEC/APC [Advanced Equipment Control/Advanced Process Control] Workshop VI, 1994.

“Development of a Computer System to Predict Hurricane Damage to Roofing,” presentation at a meeting of the Roofing Industry Committee on Wind Issues, 1993.

Reports to Research Sponsor

“Stacked Generalization and Simulated Evolution,” draft of an article subsequently published in *BioSystems*, with foreword prepped; delivered to FSI International, Inc., 1994.

“Study of Schedulers for the FSI Hybrid Modeling Facility,” delivered to FSI International, Inc., 1994. (Text by S. D. Liman, foreword by T. M. English)

“FSI Hybrid Modeling Facility Version 1.0,” delivered to FSI International, Inc., 1993. (J. Burgin, P. Durai, and T. English)

Theses Supervised

“Administration of a Network Modeling Server,” K. L. Gibson, MS, Computer Science, Texas Tech University, 1995.

“Evaluation of a Building with Respect to Wind in a Microsoft Windows Environment,” M. H. Teal, MS, Computer Science, Texas Tech University, 1995.

“Realtime Scheduling with Soft Deadlines and Cost/Value Functions,” P. M. R. Durai, MS, Computer Science, Texas Tech University, 1995. Co-Chair with S. D. Liman.

“A Neural Network Approach to Model Decision Processes,” M. Sundararajan, MS, Industrial Engineering, Texas Tech University, 1993. Co-Chair with M. R. Endsley.

“Neural Network Classification of Handwritten Characters Using an Adaptive Input Window,” D L. Phillips, MS, Computer Science, Texas Tech University, 1992.

Undergraduate Research Projects Supervised

“Sports Predictions with Evolutionary Programming,” G. Kraus, Texas Tech University, 1997.

“Optimal Path Search Algorithm for the Towers of Hanoi Problem,” C. Smith, Texas Tech University, 1993.

“A Word Spotting Neural Network Research Project,” M. Buckles and T. Rea, Texas Tech University, 1992.

Consulting

Pavilion, Inc., Austin, Texas (December 7-8, 1995). Consulted in evolutionary algorithms.

Entrepreneurial Activity

Founded 2NI, LLC, in Lubbock, Texas, with William Marcy, Ph.D.; Mica Endsley, Ph.D.; and Randy Hickle, MD. Collaborated from 1994-1995 in the design of an advanced patient monitoring system for intensive-care units.

Miscellaneous

Curator, "Salvage Work," visual art by Bonnie Buchanan, Louise Hopkins Underwood Center for the Arts, Lubbock, Texas, 2009

Curator and exhibitor, "The Body Poetic," short writings by the Ad Hoc Writers, Louise Hopkins Underwood Center for the Arts, Lubbock, Texas, 2006

"Books" column editor and writer, *Mississippi: A View of the Magnolia State* (monthly magazine with estimated readership of 75,000), 1983-1986

Winner of the first Mississippi Marathon, 1976

Honors and Distinctions

Sigma Xi Junior Faculty Research Award, Texas Tech University, 1996

Sigma Xi, 1996

Phi Kappa Phi, 1988

Upsilon Pi Epsilon (computer science honor society), 1986

National Science Foundation Doctoral Fellow, Center for Advanced Computer Studies, University of Louisiana at Lafayette, 1986-1987

First Place, Mississippi State University Student Programming Competition, 1985

Presidential Scholar, Mississippi College, 1974-1978