

CURRICULUM VITA

Wayne Iba

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TEACHING EXPERIENCE

Westmont College, Santa Barbara, California: *Assistant Professor* (Fall 2003-present). Teaching upper and lower-division Computer Science courses.

Messiah College, Grantham, Pennsylvania: *Visiting Lecturer* (Winter Term, 2001). Designed and taught Models of Mind, an upper-division interdisciplinary course on Philosophy of Mind, Cognitive Science, and Computational Models of Intelligence.

College of Notre Dame, Belmont, California: *Lecturer* (2000-2001). Designed and taught a new course, Structured Problem Solving, for two semesters; also taught Discrete Mathematics II.

University of California, Irvine: *Teaching Assistant* (1985-1986). Designed and co-taught advanced programming class developing projects in Artificial Intelligence. Supervised two undergraduates' independent study projects in Machine Learning. Also lead discussion and laboratory sections for courses in Introduction to Artificial Intelligence and Digital Logic Design.

University of California, Santa Cruz: (1984-1985) *Teaching Assistant*. Assisted faculty in Experimental Psychology, Cybernetics, Systems Programming, and Digital Logic Design. Presented laboratory sections, tutorials, and occasional lectures.

RESEARCH EXPERIENCE

Independent Consultant, October, 1998–Present. Provide contract services in variety of areas including: machine learning, data mining, click-stream analysis, personalization, adaptive user interfaces, financial risk analysis, and system administration.

Kanisa Inc., *Research Scientist*, February, 2001–June, 2003. Lead the Machine Learning efforts in the Advanced Technology Group. Improve product performance through data mining of web logs. Design and develop Machine Learning workbench. Conceive methods for improving online community interaction through observed behavior patterns.

Institute for the Study of Learning and Expertise, *Assistant Director and Senior Research Scientist*, September, 1996–September, 2000. As Assistant Director, oversee three research grants and in-house research activities; pursue additional funding sources; track grant expenditures and supervise administrative assistant and accountant. As Senior Research Scientist, direct research and supervise post-doc on project developing intel-

ligent software assistants for adaptive crisis response planning; maintain collaboration with the Computational Learning Laboratory as a *Visiting Scholar* at Stanford University's Center for the Study of Language and Information; coordinate the Seminar on Computational Learning and Adaptation at Stanford University.

Recom Technologies, Incorporated, *Computer Scientist*, May, 1990–September, 1996. Recom is a national support-service contractor providing professionals for a variety of organizations and efforts in government and industry. Assignments included:

Lockheed Martin, August, 1994–September, 1996. Managed and implemented the design of the human-machine interface and automation mechanisms for the FBI's Automated Fingerprint Identification System. Developed the Master Test Plan for the Operational Readiness Review of the Fingerprint Image Conversion Operation facility. Provided system administration support on HP, Sun, and Convex computer systems.

Artificial Intelligence Research Laboratory at NASA Ames Research Center, May, 1990–July, 1994. Directed the design and implementation of an early version of the ICARUS intelligent agent architecture. Supervised six graduate students during this period. Developed theoretical average-case analyses for several machine learning and planning algorithms. Exploited clustering techniques from Machine Learning in applications to NASA Space Shuttle telemetry analysis, air-traffic control, and automobile traffic control. Designed an automatic scheduling system for the Extreme Ultraviolet Explorer (EUVE) satellite. Reduced the human involvement required for scheduling ongoing astronomical EUVE observations.

EDUCATION

University of California, Irvine

Ph.D., 1991; M.S., 1988, Information and Computer Sciences.

Dissertation title: *Acquisition and Improvement of Human Motor Skills: Learning Through Observation and Practice*. Graduate course work included Artificial Intelligence, Machine Learning, Software Engineering, Semantics of Programming Languages, Parallel Machine Architectures, and Social Impacts of Computing.

University of California, Santa Cruz

B.A., 1984, Computer and Information Sciences, with Honors in the Major

Completed course work for Masters degree emphasizing Theory of Computation and Analysis of Algorithms but also including Heuristic Search Methods, Computer Graphics and Program Transformation. Undergraduate course work included Experimental and Cognitive Psychology, Linguistics, and Mathematics.

REFEREED PAPERS

- Iba, W. & Burwell, N. (2005). Building a testbed for studying service. *Persistent Assistants: Papers from the AAAI Spring Symposium*. Menlo Park, CA: AAAI Press.
- Iba, W. & Gervasio, M. (2000). Adaptive assistance for crisis response. *Adaptive User Interfaces: Papers from the 2000 AAAI Spring Symposium* (Technical Report SS-00-01). Menlo Park, CA: AAAI Press.
- Iba, W. & Gervasio, M. (1999). Adapting to user preferences in crisis response. *Proceedings of the International Conference on Intelligent User Interfaces*. Redondo Beach, CA: ACM Press.
- Gervasio, M. T., Iba, W., & Langley, P. (1999). Learning user evaluation functions for adaptive scheduling assistance. *Proceedings of the Sixteenth International Conference on Machine Learning* (pp. 152-161). Bled, Slovenia: Morgan Kaufmann.
- Iba, W., Gervasio, M., Langley, P., & Sage, S. (1998). Evaluating computational assistance for crisis response. *Proceedings of the Twentieth Annual Conference of the Cognitive Science Society*. Madison, WI.
- Gervasio, M. T., Iba, W., & Langley, P. (1998). Learning to predict user operations for adaptive scheduling. *Proceedings of the Fifteenth National Conference on Artificial Intelligence*. Madison, WI.
- Langley, P., & Iba, W. (1994). Reactive and automatic behavior in plan execution. *Proceedings of the Second International Conference on AI Planning Systems*. Chicago: AAAI Press.
- Langley, P., & Iba, W. (1993). Average-case analysis of a nearest neighbor algorithm. *Proceedings of the Thirteenth International Joint Conference on Artificial Intelligence*. San Mateo, CA: Morgan Kaufmann.
- Iba, W., & Langley, P. (1992). Induction of one-level decision trees. *Proceedings of the Ninth International Machine Learning Conference*. Aberdeen, Scotland: Morgan Kaufmann.
- Langley, P., Iba, W., & Thompson, K. (1992). An analysis of Bayesian classifiers. *Proceedings of the Tenth National Conference on Artificial Intelligence*. San Jose, CA: Morgan Kaufmann.
- Iba, W. (1991). Learning to classify observed motor behavior. *Proceedings of the Twelfth International Joint Conference on Artificial Intelligence* (pp. 732-738). Sydney, Australia: Morgan Kaufmann.
- Iba, W., Wogulis, J., & Langley, P. (1988). Trading off simplicity and coverage in incremental concept learning. In *Proceedings of the Fifth International Conference on Machine Learning* (pp. 73-79). Ann Arbor, MI: Morgan Kaufmann.
- Iba, W., & Langley, P. (1987). A computational theory of motor learning. *Computational*

NON-REFEREED PAPERS

- Iba, W (2003). Means-Ends Analysis. *Encyclopedia of Cognitive Science*. Macmillan Publishers Ltd.
- Iba, W (2003). Artificial service vs. artificial servants. *Proceedings of the Fourteenth Conference of the Association of Christians in the Mathematical Sciences*, (pp. 120-125). San Diego, CA.
- Iba, W., & Langley, P. (2001). Unsupervised learning of probabilistic concept hierarchies. In G. Paliouras, V. Karkaletsis, & C. D. Spyropoulos (Eds.), *Machine learning and its applications*. Berlin: Springer.
- Rogers, S. & Iba, W. (Eds.). (2000). *Adaptive User Interfaces: Papers from the AAAI Spring Symposium*. Menlo Park, CA: AAAI Press.
- Gervasio, M. T., Iba, W., & Langley, P. (1998). Case-based seeding for an interactive crisis response assistant. *Case-Based Reasoning Integrations: Papers from the 1998 Workshop* (Technical Report WS-98-15, pp. 61-66). Menlo Park, CA: AAAI Press.
- Iba, W. (1997). Attenuation of the speed-accuracy tradeoff through learning. *Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society* (pp. 956). Stanford, CA: LEA.
- Iba, W., & Gervasio, M. T. (1997). Crisis response planning: A task analysis. *Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society* (pp. 929). Stanford, CA: LEA.
- Iba, W. (1993). Improving the cost-performance tradeoff in traffic control using autonomous intelligent agents. *Proceedings of the AAAI Workshop on Artificial Intelligence in Intelligent Vehicle Highway Systems*. Menlo Park, CA: AAAI Press.
- Iba, W. (1993). Concept formation in temporally structured domains. NASA Workshop on the Automation of Time Series, Signatures, and Trend Analysis. NASA Ames.
- Iba, W. (1991). Modeling the acquisition and improvement of motor skills. *Proceedings of the Eighth International Workshop on Machine Learning* (pp. 60–64). San Mateo, CA: Morgan Kaufmann.
- Iba, W. & Gennari, J. (1991). Learning to recognize movements. In D. Fisher & M. Pazzani (Eds.) *Concept formation: Knowledge and experience in unsupervised learning*. San Mateo, CA: Morgan Kaufmann.
- Langley, P., McKusick, K. B., Allen, J. A., Iba, W. F., & Thompson, K. (1991). A design for the ICARUS architecture. *SIGART Bulletin*, 2, 104–109.
- Thompson, K., Langley, P., & Iba, W. (1991). Using background knowledge in concept formation. *Proceedings of the Eighth International Workshop on Machine Learning* (pp.

554–558). San Mateo, CA: Morgan Kaufmann.

Iba, W. (1989). *Human motor behavior: A short review of phenomena, theories, and systems* (Technical Report 89-34). Irvine, California: University of California, Department of Information and Computer Sciences.

Langley, P., Thompson, K., Iba, W., Gennari, J., & Allen, G. A. (1989). *An integrated cognitive architecture for autonomous agents* (Technical Report 89-28). Irvine, California: University of California, Department of Information and Computer Sciences.

Langley, P., Gennari, J. H., & Iba, W. (1987). Hill-climbing theories of learning. *Proceedings of the Fourth International Workshop on Machine Learning* (pp. 312–323). San Mateo, CA: Morgan Kaufmann.

INVITED PRESENTATIONS

Introductory Lessons on Machine Learning and Adaptive User Interfaces, Eight-part lecture series on Machine Learning and its applications to personalized software assistants. Sfera-Soft, Inc., San Francisco, CA. 1998–1999.

Attenuating the Speed-Accuracy Tradeoff through Learning, Seminar on Computational Learning and Adaptation, Stanford University. 1997.

Performance, Improvement, and Evaluation in Machine Learning Research, University of Aberdeen, Artificial Intelligence Spring Seminar Series, Aberdeen, Scotland. 1995.

Applying Machine Learning Techniques to Problems and Concerns at NASA, Vanderbilt University AI Seminar. 1994.

Improving the Cost Tradeoff in Traffic Signal Control, AAAI Workshop on Intelligent Vehicle Highway Systems, Washington D.C. 1993.

Learning Temporally Structured Concepts from Shuttle Telemetry Data, NASA Time Series workshop, Moffett Field, CA. 1993.

Learning To Recognize Movements From Observation, ISLE Concept Formation Workshop, Stanford, CA. 1990.

PROFESSIONAL AND UNIVERSITY SERVICE

Area Chair, International Conference on Machine Learning, Stanford, CA (2000).

Co-chair, AAAI Spring Symposium on Adaptive User Interfaces, Stanford, CA (2000).

NASA review panelist for Thinking Space Systems, Washington DC (2000).

Co-chair, IJCAI workshop, *Learning About Users*, Stockholm, Sweden (1999).

Board of directors, MindShadow.com, Palo Alto, CA (1999-2001).

Board of directors, Institute for the Study of Learning and Expertise (1994–1996).

AAAI Program Committee (1997).

Co-Organizer of Seminar on Computational Learning and Adaptation at Stanford University

(1996–1998).

Reviewer for *Machine Learning* journal, *Journal of Artificial Intelligence Research*, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Cognitive Science Conference, IEEE Conference on Applications of Artificial Intelligence.

External member of dissertation committee for Rajeev Saraf at Vanderbilt University, Department of Civil Engineering (1994).

Graduate student representative for UC Irvine's Committee on Academic Personnel (1989–1990)

Graduate student representative on the Information and Computer Science department's Executive Committee (1988–1989)

Member, AAAI, Cognitive Science Society, and Society for Machines and Mentality.