

# JUDE W. SHAVLIK

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## OBJECTIVE

Seeking opportunities in machine learning research and education.

## EXPERTISE

- Thirty-three years of research and teaching experience in machine learning; taught *Introduction to Artificial Intelligence* (13 times), *Machine Learning* (18 times; new graduate class created in 1988), *Building Deep Neural Networks* (new class first taught Spring 2017), plus several other courses
- Named Fellow of the *Association for the Advancement of Artificial Intelligence* (AAAI) in 2006 for "significant contributions to machine learning, especially knowledge-intensive approaches, and the application of machine learning to problems in computational biology" (one of only seven people elected AAAI Fellow in 2006)
- Published on neural networks, decisions trees and forests, support-vector machines, reinforcement learning, probabilistic-logic learning, transfer learning, Bayesian networks, ensembles, genetic algorithms, explanation-based learning, applications in molecular biology and medicine
- Chaired 1997 *Intl. Conf. on Machine Learning (ICML)* and the inaugural *Intelligent Systems for Molecular Biology Conf. (ISMB; 1993)*, plus co-chaired several other conferences and workshops; invited speaker at *ICML-1992* and several other conferences
- Elected member of the inaugural Board of Directors of the *International Society of Machine Learning* (2001-06) and member of the inaugural Board of Directors of the *International Society for Computational Biology* (1997-98)
- Co-edited (with Tom Dietterich) *Readings in Machine Learning*, leading textbook for graduate machine learning classes in the early/mid 1990s
- Editorial boards of *Machine Learning* (1994-2020), *J. of Machine Learning Research* (2001-10), *J. of AI Research* (1994-97), *J. of Data Mining and Knowledge Discovery* (1996-2010), *ACM Trans. on Knowledge Discovery in Data* (2005-2009), *AI Magazine* (editor-in-chief 1996-99; editorial board 1999-2007), *Cognitive Science* (2001-03), plus several other journals and over 100 conference program and organizing committees
- Substantial programs written in Python, C/C++, Java, Prolog, Matlab, Lisp, Fortran, Keras/TensorFlow, Hadoop, and Spark
- Papers cited over 19,000 times according to Google Scholar ( $h$ -index = 62); supervised 18 PhD theses plus several MS and BS theses
- Research continually funded 1990-2017 by DARPA, NIH (NLM and NCI), ONR, NSF, IBM, AT&T, NYNEX, and Yahoo
- Full *Curriculum Vitae* at <http://pages.cs.wisc.edu/~shavlik/shavlik-long-cv.pdf>

## POSITIONS

University of Wisconsin

1/7/1988 — 7/14/2017

Madison, WI

Computer Sciences Department; Assistant Professor (1988-94), Associate Professor (1994-98), Professor (1998-2017), Associate Department Chair (2007-2009)

Biostatistics & Medical Informatics, Professor (1999-2017), Director of Medical Informatics ('99-'16)

Yahoo Research

9/1/2013 — 8/31/2014

New York, NY

Learned about Hadoop and Spark, extending our probabilistic-logic learning software to these platforms (half time, while on sabbatical)

Others

Visiting Professor, University of Maryland (1996-97); Visiting Scientist, National Library of Medicine (1996-1997); Member of Technical Staff, Mitre (1980-82); graduate student teacher and researcher; consultant to 15 companies of various sizes.

## EDUCATION

PhD, Computer Science, University of Illinois, Urbana-Champaign, 1988

MS, Biophysics and Biochemistry, Yale University, 1980

BS, Electrical Engineering, MIT, 1979

BS, Biology, MIT, 1979

## SAMPLE PUBLICATIONS

Knowledge-based artificial neural networks, G. Towell & J. Shavlik, *Artificial Intelligence*, 1994

Extracting tree-structured representations of trained networks, M. Craven & J. Shavlik, *NIPS*, 1996

Creating advice-taking reinforcement learners, R. Maclin & J. Shavlik, *Machine Learning*, 1996

Knowledge-based support vector machine classifiers, G. Fung, O. Mangasarian, & J. Shavlik, *Procs. NIPS*, 2002

Using advice to transfer knowledge acquired in one reinforcement learning task to another, L. Torrey, T. Walker, J. Shavlik & R. Maclin, *Procs. ECML*, 2005

Creating protein models from electron-density maps using particle-filtering methods, F. DiMaio, D. Kondrashov, E. Bitto, A. Soni, C. Bingman, G. Phillips, & J. Shavlik, *Bionformatics*, 2007

Breast cancer risk estimation with artificial neural networks revisited: Discrimination and calibration, T. Ayer, O. Alagoz, J. Chatwal, J. Shavlik, C. Kahn, & E. Burnside, *Cancer*, 2010

Tuffy: Scaling up statistical inference in Markov logic using an RDBMS, F Nui, C. Re, A. Doan, & J. Shavlik, *Procs. VLDB*, 2011

Gradient-based boosting for statistical relational learning: The relational dependency network case, S. Natarajan, T. Khot, K. Kersting, B. Gutmann, & J. Shavlik, *Machine Learning*, 2011  
(companion paper for Markov Logic Networks, MLNs, published in *Machine Learning* 2015)

Big data versus the crowd: Looking for relationships in all the right places, C. Zhang, F. Niu, C. Re, & J. Shavlik, *Procs. ACL*, 2012

## INDUSTRIAL EXPERIENCE (\* marks projects since July 2017)

American Family Insurance  
Andersen Consulting (now Accenture)  
Arcuity AI \* (startup doing text processing from medical documents)  
Dow AgroSciences  
DNASTAR (small Madison, WI company doing bioinformatics)  
Drive (small NYC company doing on-line ad placement) \*  
Field Technologies (small NYC startup doing 3D gesture recognition) \*  
Gates Foundation \*  
Global Infotech (small company in DC doing data mining)  
Hazelden Betty Ford Foundation \*  
IBM  
Informatica \*  
Intel \*  
Karat (writing machine-learning questions for applicant screening) \*  
Moxe (small Madison, WI company doing medical informatics) \*  
Nimblegen (small Madison, WI company doing bioinformatics; now Roche Nimblegen)  
NYC consumer financial company (predicting level of debt of potential customers) \*  
NYNEX (New York / New England Telephone; now part of Verizon)  
OT App Design (SBIR grantee analyzing children's handwriting) \*  
Realtime Methods, Inc (small company in Silicon Valley doing information extraction from text)  
Sandia National Laboratory \*  
Shavlik Technologies (computer security; founded by my brother, bought by VMware)  
Simple Machines Inc. (AI Chip startup) \*  
SRI International  
Stone Ridge Asset Management (NYC-based fintech company) \*  
University of Virginia Physics Department \*  
Yahoo (spent a sabbatical year in their NYC office 2012-2013)  
plus external reviewer for various government agencies, universities, and journals