

# Biographical Sketch of Dana S. Nau

## Professional Preparation

- Duke University                      Computer Science      Ph.D., 1979 (NSF graduate fellow)
- Duke University                      Computer Science      A.M., 1976 (NSF graduate fellow)
- University of Missouri at Rolla      Applied Mathematics      B.S., 1974

## Appointments

- Director, Laboratory for Computational Cultural Dynamics (LCCD), Univ. of Maryland
- Professor, Dept. of Computer Science, University of Maryland
- Professor, Institute for Systems Research (ISR), University of Maryland
- Affiliate Professor, Institute for Advanced Computer Studies (UMIACS), Univ. of Maryland
- Affiliate Professor, Dept. of Mechanical Engineering, University of Maryland

## Research

Here are some examples of Dr. Nau's research accomplishments:

1. Dr. Nau's Ph.D. work on game-tree pathology spawned an entire subfield of AI. Near thirty years later, researchers are still actively working on this topic, and publishing on it in major conferences and journals.
2. Dr. Nau co-authored the planning algorithm that enabled Bridge Baron to win the 1997 world championship of computer bridge, as reported in major media outlets such as the *Washington Post* and *New York Times*. Bridge Baron is a successful commercial product that has sold many thousands of copies.
3. Dr. Nau's SHOP and SHOP2 automated-planning program are available as freeware, have been downloaded thousands of times, and have been used in hundreds of projects in industry, government, and academia. SHOP2 won one of the top four awards in the 2002 *International Planning Competition*.
4. Dr. Nau co-authored *Automated Planning: Theory and Practice*, the standard graduate-level textbook on automated planning.
5. Dr. Nau's research on manufacturing planning been used at NIST, Texas Instruments, General Motors, and elsewhere.
6. **Awards and Honors.** NSF Graduate Fellow, 1974-7. J.B. Duke Graduate Fellow, 1977-8. NSF Presidential Young Investigator, 1984-9. IBM faculty development award, 1984-6. Honorable mention, Texas Instruments call for papers on AI for industrial automation, 1987. Honorable mention for best paper, AAAI-91. ISR Outstanding Systems Engineering Faculty, 1993. Best paper, ASME CIE Conference, 1994. Best research paper, ECCBR, 2002. Elected AAAI Fellow, 1996. Co-author of Bridge Baron (1997 world champion of computer bridge). Lead author of SHOP2 (award winner in the 2002 International Planning Competition).

## Service to the Scientific and Engineering Community

Dr. Nau has been on editorial boards for the *JAIR* and several other major journals and book series, and a reviewer for many more. He has been a program committee member for *IJCAI*, *AAAI*, and a great many other conferences, and a reviewer for many more. He has chaired *ICAPS* and several other major conferences. He has been a reviewer for *NSF* and several other funding agencies. He is one of the founders of the *International Conference on Computational Cultural Dynamics (ICCBR)*.

## Selected Publications

Dr. Nau has more than 300 research publications. Some examples include:

1. T.-C. Au and D. Nau. Accident or intention: That is the question (in the iterated prisoner's dilemma). In *International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2006.
2. A. Parker, D. Nau, and V. Subrahmanian. Overconfidence or paranoia? search in imperfect-information games. In *Proceedings of the National Conference on Artificial Intelligence (AAAI)*, July 2006.
3. D. Nau, T.-C. Au, O. Ilghami, U. Kuter, H. Muñoz-Avila, J. W. Murdock, D. Wu, and F. Yaman. Applications of SHOP and SHOP2. *IEEE Intelligent Systems* 20(2):34–41, Mar.-Apr. 2005.
4. U. Kuter and D. Nau. Forward-chaining planning in nondeterministic domains. *Proceedings of the National Conference on Artificial Intelligence (AAAI)*, 2004.
5. M. Ghallab, D. Nau, and P. Traverso. *Automated Planning: Theory and Practice*. Morgan Kaufmann, May 2004.
6. D. Nau, T.-C. Au, O. Ilghami, U. Kuter, W. Murdock, D. Wu, and F. Yaman. SHOP2: An HTN planning system. *Journal of Artificial Intelligence Research*, **20**, Dec. 2003.
7. T.-C. Au, H. Muñoz-Avila, and D. Nau. On the complexity of plan adaptation by derivational analogy in a universal classical planning framework. In *ECCBR-2002*, pp. 13-27. Aberdeen, Scotland, September 4-7, 2002. **Best research paper award.**
8. S. J. J. Smith, D. S. Nau, and T. Throop. Computer bridge: A big win for AI planning. In *AI Magazine*, **19**: 93–105, June 1998.
9. K. Erol, D. Nau, and V.S. Subrahmanian. Complexity, decidability and undecidability results for domain-independent planning. *Artificial Intelligence*, **76**(1-2):75-88, 1995.
10. V. S. Subrahmanian, D. S. Nau and C. Vago. WFS + branch and bound = stable models. *IEEE Trans. on Knowledge and Data Engineering*, **7**(3):362-377, 1995.
11. D. Das, S. K. Gupta, and D. S. Nau. Reducing setup cost by automated generation of redesign suggestions. *Proc. ASME Computers in Engineering Conf.*, pp. 159-170, 1994. **Best paper award.**
12. D. S. Nau. Decision quality as a function of search depth on game trees. *JACM* **30**(4):687-708, 1983.